DOCUMENT RESUME

ED 057 266 AA 000 759

TITLE	Longitudinal Evaluation of Selected Features of the National Follow Through Program.
INSTITUTION	Stanford Research Inst., Menlo Park, Calif.
SPONS AGENCY	Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
REPORT NO	SRI-P-7370
PUB DATE	Mar 71
CONTRACT	OEC-0-8-522480-4633(100)
NOTE	231p.; Draft report
EDRS PRICE	MF-$0.65 HC-$9.87
DESCRIPTORS	Academic Achievement; Data Collection; *Disadvantaged Youth; *Early Childhood Education; Economic Disadvantagement; *Educational Objectives; *Followup Studies; *Longitudinal Studies; Parent Attitudes; Program Evaluation; Social Development; Statistical Analysis; Student Attitudes; Tables (Data); Teacher Attitudes
IDENTIFIERS	*Follow Through Program

ABSTRACT

An evaluation is made of the efficacy of various approaches to early childhood education when tested in the natural laboratories of operating schools, and the Follow Through program's impact on achieving social changes and ameliorating effects of poverty through education. Judged primarily from data collected during the 1969-70 school year, Follow Through is achieving its intended objectives. Some of the major findings of the program evaluation are: (1) Effects of Follow Through participation on children, parents, and school staff are not identical from one sponsored approach to another; (2) Children at all grade levels in Follow Through showed greater gains in school achievement than did their non-Follow Through counterparts; (3) Follow Through children showed positive changes in their attitudes toward school, their teachers, and their classmates; (4) Parents of Follow Through children showed consistently higher levels of awareness of their children's school program; were more likely to visit school; tended to be somewhat more satisfied with their child's school; and regarded the school's program as being more efficacious; and (5) Teachers and other school staff generally viewed the program as very helpful to the children and as influencing their teaching practices and attitudes. There are 8 chapters, 8 numbered appendices, 12 illustrations, and 31 tables in this report. For Appendix A, Statistical Data, see ED 057 267. (DB)

BESE

DRAFT

LONGITUDINAL EVALUATION OF SELECTED FEATURES OF THE NATIONAL FOLLOW THROUGH PROGRAM

Prepared for:

FOLLOW THROUGH PROGRAM
U.S. OFFICE OF EDUCATION
DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
WASHINGTON, D.C. 20202

The research reported herein was performed pursuant to a contract with the United States Department of Health, Education, and Welfare, Office of Education.

STANFORD RESEARCH INSTITUTE
Menlo Park, California 94025 · U.S.A.

1

DRAFT

STANFORD RESEARCH INSTITUTE
Menlo Park, California 94025 · U.S.A.

March 1971

LONGITUDINAL EVALUATION OF SELECTED FEATURES OF THE NATIONAL FOLLOW THROUGH PROGRAM

Prepared for:

FOLLOW THROUGH PROGRAM
U.S. OFFICE OF EDUCATION
DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
WASHINGTON, D.C. 20202

CONTRACT OCE-0-8-522480-4633(100)

SRI Project 7370

2

DRAFT

PREFACE

The ultimate goal of Follow Through is to increase the opportunities for poor children to have self-confident, productive, constructive lives. The Follow Through program was established through the U.S. Office of Education and the Office of Economic Opportunity to sustain and supplement in the early grades the gains made by low income children who have a full year's experience in a Head Start or comparable preschool program. The program is administered by the U.S. Office of Education under a delegation of authority from the Office of Economic Opportunity.

The environment in which a child lives and the persons with whom the child interacts all affect the child in complex ways to influence his development and his life chances. Because of these complex personal, social, and environmental interactions, the Follow Through program has many components, as described in the Background section of this report.

This document is a progress report on SRI activities in support of the total Follow Through program. Selected data are provided in a separate volume, Appendix A. Extensive data on specific evaluation tasks have been provided to the Follow Through Program of the U.S. Office of Education.

ACKNOWLEDGMENTS

The studies underlying this progress report would not have been possible without the generous efforts of many people. Our appreciation encompasses thousands of citizens--educators, parents, Follow Through staff, project support staff, and others--and children throughout the country who have contributed in some way to the Follow Through evaluation.

We are especially grateful to staff of the U.S. Office of Education, particularly Robert Egbert, Richard Snyder, Judith Crooks, and Donald Burnes, who have provided guidance and support throughout the evaluation. Special thanks also are due the program sponsors upon whose cooperation we have depended.

Numerous consultants have assisted in the formulation of the evaluation design and reviewing of results. Although it is impractical to list all such individuals, we are especially indebted to Eleanor Maccoby, Robert Hess, and Leon Festinger whose counsel and support have been given generously over the past two or more years.

This evaluation project was administered by the Urban and Social Systems Division of Stanford Research Institute, Harvey L. Dixon, Executive Director. The Project Director was Philip H. Sorensen, and William G. Madow was Associate Project Director.

The ultimate responsibility for the work represented in this progress report rests with the SRI project staff. Professional members of the SRI evaluation project staff and their primary assignments during 1969-70 are listed below:

Pupil and Classroom Measurement

Phil Baker
John Clement
John Dohme
John Emrick
Jean Lotridge
Tor Meeland
W. Ray Rhine
Leilani Spencer
Jane Stallings

Family and Community Measurement

John J. Bosley
C. Stanley Crockett
Cynthia Daner
Phyllis Hamilton
Harry V. Kincaid
Diane Kirk
Karen Lee
Joan Lewis
Stephen Oura
Gertrude Peterson
Robert Walker

Design, Analysis, and Data Processing

Patricia Gillespie
Sandra Goldstein
Martin Gorfinkel
Arthur Hager
Irene Longwell
Michael McCullough
William G. Madow
Michel M. Rogson
Annabelle Yip

Field Staff

Margaret Carroll
Daryl L. Dell
Dominic A. Guidici
Edward Jackson
Alix McClary
Gary Marshall
Carl Negus
Grace Wright

Administrative and Support

Harvey L. Dixon
Thomas Lorch
Richard Marciano
Philip H. Sorensen
Dorothy Stewart

CONTENTS

PREFACE ii

ACKNOWLEDGMENTS iii

PRECIS xiii

I BACKGROUND 1

Origin and Objectives of Follow Through 1
Growth of Follow Through 2
The Concept of Sponsorship and Planned Variation 2
Similarities and Differences Among Sponsor Models 3
Responsibilities for the Evaluation 4

II SUMMARY OF FINDINGS 5

Sponsors and Projects 5
  Project Selection 5
  Sponsor Grouping 6
  Project Implementation 7
Pupil Development 8
  Achievement Outcomes by Sponsor Groupings 9
  Attitude Changes by Sponsor Groupings 9
  Changes Related to Poverty, Preschool Experience, and Services Received 10
  Non-Cognitive Characteristics 11
Homes and Families 12
Teachers and Classrooms 13

III THE PLAN AND PROCEDURES OF THE FOLLOW THROUGH EVALUATION . . 16

Aims and Purposes of the Evaluation 16
The Strategy and Design of the Evaluation 18
  Goals and Standards 20
  Quasi-experimental Character of the Evaluation 21
  Comparison Groups 22
Collection of Data 23
  Instrumentation 23
  Project and Person Data Base 32
  Field Work Organization 36

CONTENTS

III Continued

Processing and Storage of Data 37
Analysis and Presentation of Data 37
  Statistical Procedures 38
  Statistical Presentation 39

IV SPONSORS AND PROJECTS 42

Grouping of Sponsors 42
  Sponsor Group 1 43
  Sponsor Group 2 43
  Sponsor Group 3 44
  Sponsor Groups 4 and 5 45
Program Implementation as Judged by Sponsors 46
  Project Ratings and Rankings 46
  Analyses 47
Parent Characteristics as Indicators of Implementation Status 52

V TEACHERS AND CLASSROOMS 55

Classroom Process Observations 55
  Time Allocation to Activities 57
  Organization of Classroom Learning Groups 59
  Communication Patterns: Amount, Kind, and Focus 60
Characteristics of Follow Through and Non-Follow Through Teachers 63
  General Characteristics of the Teachers 63
  Differences Among Teacher Responses According to Sponsor Group and Grade 66

VI FAMILIES AND HOMES 71

Demographic Characteristics 72
Family Life Style 74
Parent Awareness of and Participation in School Activities . 75

CONTENTS

VII THE CHILDREN 80

Pupil Outcome Measures: Achievement, Attitudes Toward School, and Interpersonal 82
Standardization of Scores on Pupil Measures 84
The Outcome Measures Applied to Children from Lower Income Families 87
Interactions Between the Outcome Measures and Preschool Experience, Poverty Level, and Services Received 94
  Interactions Associated with Achievement 94
  Interactions Associated with Attitudes Toward School. . . . 97
  Interactions Associated with Interpersonal Feelings 100
The Outcome Measures, by Poverty Classification and Sponsor Group 108
  Kindergarten 109
  Entering First Grade 115
  Non-Entering First Grade, and Second Grade 121
Non-Cognitive Measures 129
  Variables 130
  Results 131

VIII RELATIONSHIPS AMONG SELECTED PUPIL, PARENT, AND TEACHER VARIABLES 137

Relationships Among Measures of Awareness and Participation, and Pupil Achievement and Attitudes 138
  Parent Awareness of Classroom Activities 139
  Parent/School Contacts Beyond the Classroom 140
  Parent Works in Classroom or School 141
  Visits to the Classroom by Family Members 141
  Recency of Parent/Teacher Talks 142
  Parent General Satisfaction with Child's School 142
  Parent Sense of Influence and Control Over Schools 143
  Parent Feelings That His Ideas Matter 143
  Parent Involvement in Social and Political Groups 144
  Follow Through Parents Awareness of the PAC 144

CONTENTS

VIII Continued

Relationships Among Family Life Style Variables and Pupil Achievement and Attitudes 146
Relationships of Kindergarten Teacher Characteristics and Practices to Kindergarten Pupil Achievement 149
  Teacher Age and Ethnic Origin 149
  Teacher's Academic Background and Certification 149
  Formal Training in Teaching Disadvantaged Children 149
  On-the-Job Teacher Training 150
  Perceived Advantages in Teaching Follow Through 150
  Teacher Satisfaction with Pupil Progress 150
  Home Visits by Teachers 151
  Parent Participation in Classroom Activities 151
  Number of Assistants and Volunteers in the Classroom . . . 152
Relationships Among Measures of Pupil Achievement, Attitude Toward School, and Interpersonal Feelings 153
Relationships Among Non-Cognitive, Achievement, and Attitude Measures 156
  Kindergarten and First Grade Correlations 159
  Second and Third Grade Correlations 160

APPENDICES

1 DEFINITIONS OF POVERTY 163

2 LIST OF PROJECTS AND DATA COLLECTION ACTIVITIES 167

3 LIST OF SPONSORS AND ADDRESSES 179

4 PUPIL ACHIEVEMENT TEST BATTERY 184

5 NON-COGNITIVE TEST BATTERY 192

6 PARENT INTERVIEW SURVEY 197

7 TEACHER AND AIDE QUESTIONNAIRES 202

8 DEFINITIONS OF VARIABLES 205

Appendix A, Statistical Data, is bound separately.

ILLUSTRATIONS

1 Mean Standardized Pupil Achievement Scores for Follow Through (FT) and Non-Follow Through (NFT) Kindergartners in 18 Projects 110

2 Mean Standardized Attitudes Toward School Scores for Follow Through (FT) and Non-Follow Through (NFT) Kindergartners in 18 Projects 112

3 Mean Standardized Interpersonal Feelings Scores for Follow Through (FT) and Non-Follow Through (NFT) Kindergartners in 18 Projects 114

4 Mean Standardized Pupil Achievement Scores for Follow Through (FT) and Non-Follow Through (NFT) Entering First Graders in 9 Projects 116

5 Mean Standardized Attitudes Toward School Scores for Follow Through (FT) and Non-Follow Through (NFT) Entering First Graders in 9 Projects 118

6 Mean Standardized Interpersonal Feelings Scores for Follow Through (FT) and Non-Follow Through (NFT) Entering First Graders in 9 Projects 120

7 Mean Standardized Pupil Achievement Scores for Follow Through (FT) and Non-Follow Through (NFT) Non-Entering First Graders in 21 Projects 122

8 Mean Standardized Attitudes Toward School Scores for Follow Through (FT) and Non-Follow Through (NFT) Non-Entering First Graders in 21 Projects 123

9 Mean Standardized Interpersonal Feelings Scores for Follow Through (FT) and Non-Follow Through (NFT) Non-Entering First Graders in 21 Projects 124

10 Mean Standardized Pupil Achievement Scores for Follow Through (FT) and Non-Follow Through (NFT) Second Graders in 19 Projects 125

11 Mean Standardized Attitudes Toward School Scores for Follow Through (FT) and Non-Follow Through (NFT) Second Graders in 19 Projects 126

12 Mean Standardized Interpersonal Feelings Scores for Follow Through (FT) and Non-Follow Through (NFT) Second Graders in 19 Projects 127

TABLES

1 Project and Person Data Base for Data Collection Activities, 1969-70 34

2 Sponsor Rankings of Status of Project Implementation Related to (FT)-(NFT) Differences in Achievement Test Scores 48

3 Sponsor Rankings of Status of Project Implementation Related to (FT)-(NFT) Differences in Pupils' Attitudes Toward School 49

4 Sponsor Rankings of Status of Project Implementation Related to (FT)-(NFT) Differences in Pupils' Interpersonal Feelings 50

5 Sponsor Expectations of Classroom Observation Process Variables 58

6 Selected Characteristics of Follow Through and Non-Follow Through Teachers 64

7 Sponsor Training and Support Reported by Follow Through Teachers 67

8 Percent of Follow Through Teachers in Each Sponsor Group Suggesting Various Kinds of Additional Needed Support from Sponsors 69

9 Percent of Follow Through Teachers Reporting an Advantage to Teaching in a Follow Through Program 70

10 Summary of Comparisons of Follow Through and Non-Follow Through Families on Demographic Characteristics 73

11 Summary of Comparisons of Follow Through and Non-Follow Through Families on Family Life Style 76

12 Summary of Comparisons of Follow Through and Non-Follow Through Families on Parent Awareness of and Participation in School Activities 77

13 Mean Percent Correct on Achievement Battery for Pupils and Projects at Various Grade Levels 85

TABLES (Continued)

14 Summary of Achievement Test Scores for Follow Through and Non-Follow Through Pupils Classified as "Certain Poverty" and "Possible Poverty," 1969-70 88

15 Summary of Attitudes Toward School (and Learning) Scores for Follow Through and Non-Follow Through Pupils Classified as "Certain Poverty" and "Possible Poverty," 1969-70 91

16 Summary of Interpersonal Feelings Scores for Follow Through and Non-Follow Through Pupils Classified as "Certain Poverty" and "Possible Poverty," 1969-70 92

17 Direction of Differences Between Follow Through and Non-Follow Through Pupils at All Grades on Achievement Test Scores Obtained Fall and Spring, 1969-70, By Preschool Experience and Poverty Classification 95

18 Direction of Differences Between Follow Through and Non-Follow Through Pupils at All Grades on Achievement Test Scores Obtained Fall and Spring, 1969-70, By Poverty Classification and Follow Through Services Received 98

19 Direction of Differences Between Follow Through and Non-Follow Through Pupils at All Grades on Achievement Test Scores Obtained Fall and Spring, 1969-70, By Preschool Experience and Follow Through Services Received 99

20 Direction of Differences Between Follow Through and Non-Follow Through Pupils at All Grades on Attitudes Toward School Scores Obtained Fall and Spring, 1969-70, By Preschool Experience and Poverty Classification 101

21 Direction of Differences Between Follow Through and Non-Follow Through Pupils at All Grades on Attitudes Toward School Scores Obtained Fall and Spring, 1969-70, By Poverty Classification and Follow Through Services Received 102

TABLES (Concluded)

22 Direction of Differences Between Follow Through and Non-Follow Through Pupils at All Grades on Attitudes Toward School Scores Obtained Fall and Spring, 1969-70, By Preschool Experience and Follow Through Services Received 103

23 Direction of Differences Between Follow Through and Non-Follow Through Pupils at All Grades on Interpersonal Feelings Scores Obtained Fall and Spring, 1969-70, By Preschool Experience and Poverty Classification 105

24 Direction of Differences Between Follow Through and Non-Follow Through Pupils at All Grades on Interpersonal Feelings Scores Obtained Fall and Spring, 1969-70, By Poverty Classification and Follow Through Services Received 106

25 Direction of Differences Between Follow Through and Non-Follow Through Pupils at All Grades on Interpersonal Feelings Scores Obtained Fall and Spring, 1969-70, By Preschool Experience and Follow Through Services Received 107

26 Non-Cognitive Measurement Profile for a Judgmental Sample of Projects Reflecting Four Sponsor Groups 132

27 Correlations between Standardized Measures of School Achievement, Attitudes Toward School and Learning, and Interpersonal Feelings for Kindergartners and First Graders 154

28 Correlations of Non-Cognitive, Achievement, and Attitude Scores for Follow Through and Non-Follow Through Kindergartners and First Graders 157

29 Correlations of Non-Cognitive, Achievement, and Attitude Scores for Follow Through and Non-Follow Through Second and Third Graders 158

4-1 Item Distribution for 1969-70 Achievement Test Battery, by WRAT/Non-WRAT Components for Each Grade Level Tested 191

6-1 Number of Parent Respondents, by Child's Grade Level and Interview Form Completed 200

PRECIS

Two basic issues dominate the evaluation of Follow Through. The experimental issue concerns the efficacy of various approaches to early childhood education when tested in the natural laboratories of operating schools. The policy issue revolves around the questions of achieving social changes and ameliorating impacts of poverty through education.

Bald statements about these complex and pressing issues can be made but not proven by data based on one school year. On the experimental question, it will be possible to detect, measure, analyze, and present for judgment the consequences of different approaches as revealed in children's behavior and beliefs, in the practices and attitudes of teachers, and in the reactions and feelings of families and the larger community. Determining the relative effectiveness of different approaches implies an ability to (1) describe the operations of each, (2) perceive and measure differences among them, and (3) assess the importance of differences in their operations and in their consequences.

This report presents the existing evidence, with occasional bewildering contradictions. Verdicts should be deferred, therefore, even though some trends are evident now. Data from the 1969-70 school year provide some clear indications that the experimental models in Follow Through (1) operate differently from one another, (2) have constituencies of different sizes and degrees of enthusiasm, and (3) are associated with different effects among children.

The contradictions and uncertainties in these data are the best arguments to support the recommendation that more time is needed to sort through, better understand, and ultimately weigh the cumulative evidence before rendering judgments about the relative effectiveness of different Follow Through sponsor models.

On the social policy issue, the trends seem clear. Follow Through is approaching the immediate goals set for it in the authorizing legislation. The consequences of participation in Follow Through seen in child achievement and attitudes, in parent actions and attitudes, and in the processes of instruction are most vivid where Follow Through was intended to have its impact--with children and families who are most poor, with children who had experienced Head Start before they entered regular school, and with children who receive the full array of Follow Through services.

To the extent that a foundation for learning within the limits of individual competence is a necessary, if not sufficient, condition for improved life chances, one can speak of social objectives of Follow Through being realized.

Even though the short run effects are encouraging, a verdict on the worth of Follow Through is not possible at this time. The immediate questions, such as whether poor children who participate in the program are learning more and learning faster can be answered. The extent to which these advantages will translate ultimately into improved life chances is a question that may never be answered unequivocally and certainly cannot be answered in the span of a few years.

Considered as a whole, and judged primarily from data collected during 1969-70, Follow Through is achieving its intended objectives. Some of the major findings of the evaluation to date are:

(1) Effects of Follow Through participation on children, parents, and school staff are not identical from one sponsored approach to another. It appears, therefore, that the strategy of planned variation which gives Follow Through its unique research and development quality also will yield evidence through time from which judgments can be made regarding most promising approaches to early childhood education.

(2) Children at all grade levels in Follow Through showed greater gains in school achievement during the school year than did their non-Follow Through counterparts. This was true for all children combined and was particularly so for those children whose families were most poor. Children in kindergarten exceeded their non-Follow Through counterparts in the absolute level of measured achievement reached by the end of the 1969-70 school year as well as exceeding them in the rate of change during the year.

(3) Follow Through children showed positive changes during the 1969-70 school year in their attitudes toward school and in their feelings about their teachers and classmates. Most of these changes were not sigificantly different from those shown by non-Follow Through children during the same period.

(4) In contrast to parents of non-Follow Through children, parents of Follow Through children showed consistently higher levels of awareness of their children's school program, were more likely to visit school and talk to teachers and other staff, tended to be somewhat more satisfied with their child's school, and reflected a greater sense of efficacy with regard to school programs.

(5) Teachers and other school staff who were involved in Follow Through, including paraprofessional aides and assistants, generally viewed Follow Through as very helpful to children, as a program in which they would like to continue, and as a program that has influenced both their instructional practices and their feelings about what is desirable and possible.

I BACKGROUND

Origin and Objectives of Follow Through

In December 1967, Congress amended the Economic Opportunity Act of 1964 to establish:

> A program to be known as Follow Through focused primarily on the children in kindergarten or elementary school who are previously enrolled in Head Start or similar programs and designed to provide comprehensive services and parent participation activities. . . . which the director finds will aid in the continued development of children in their full potential.

Follow Through is a comprehensive program of instruction and services for disadvantaged children from kindergarten through third grade. It is intended for children of parents who meet the poverty standards of eligibility established by the Office of Economic Opportunity (OEO).* Follow Through's ultimate aim is to improve the life chances of these children.

The Follow Through program is administered by the Office of Education (OE), under a delegation of authority from OEO, and requires the following components in each local Follow Through project:

(1) An instructional program

(2) A program sponsor

(3) Staff training and development programs

(4) Provision for the use of paid paraprofessionals and volunteer workers

(5) Parent involvement

---

* The OEO "poverty line" index in force during 1969-70 is reproduced in Appendix 1, which also gives the operational definitions of levels of poverty that SRI employed in the analyses contained in this report.

(6) An advisory council, the Policy Advisory Committee (PAC), which must draw over half of its members from parents of Follow Through children and play a substantial role in the planning and management of the project

(7) Participation of community agencies

(8) Medical and dental services

(9) A nutritional program

(10) A social services program

(11) Guidance and psychological services.

Growth of Follow Through

Follow Through began as a pilot program during the school year 1967-68 with 40 projects reaching approximately 5,000 students in 35 states and Puerto Rico. In 1968-69 there were projects in Washington, D.C., Puerto Rico, and every state except Wyoming. There were 104 Follow Through projects in 91 geographical places; 47 of these projects were included in the SRI evaluation study sample during 1968-69. By 1969-70, the number of projects had increased to 161 in 140 locations and the SRI study sample was increased to 89 projects. All Follow Through projects for 1969-70 are listed in Appendix 2. That tabulation also shows the data collection activities undertaken in each project during 1968-70.

The list illustrates how widespread in geographical and urban/rural characteristics are the Follow Through projects. No quick summary can do full service to the variation among them. However, Follow Through projects are most likely to be found in (1) inner-city neighborhoods of large metropolitan areas, (2) the rural south, (3) Appalachia, and (4) Indian reservations. As with all generalizations, this one is not applicable in all cases--witness Burlington, Vermont or Tacoma, Washington or Vincennes, Indiana.

The Concept of Sponsorship and Planned Variation

Between December 1967 and February 1968, OE convened a series of meetings to further develop and refine the Follow Through program. At these meetings a strategy of "planned variation" was adopted, whereby a variety of approaches to the early education of disadvantaged children was to be employed and tested within Follow Through. The Office of Education invited a number of groups that had done significant work in early childhood education to submit program models which they were willing to implement in local projects. Thirteen sponsor models were selected to be initiated during 1968-69; six more were added during 1969-70. A list of sponsors and addresses are provided in Appendix 3.((One of the original 13 sponsors did not continue and is therefore not included in the 1968-69 data shown in Appendix 3.)

All projects begun after the pilot year have been expected to choose a sponsor. The original projects also were requested to select one; most did so, but some projects remain self-sponsored. Also, some projects have been planned and governed by parent groups; these are identified as parent-implemented, and may or may not have instructional model sponsors. The sponsor models are associated with a university or other educational organization.

Similarities and Differences Among Sponsor Models

The concept of planned variation was not intended as a means of finding a single "best" method of early education for disadvantaged children. A wide variety of poverty areas and disadvantaged populations exist, and a program that is appropriate for one may not be for another. To estimate these "program-by-circumstance" interactions, sponsors are testing their models in several different locations. Also, many of the programs are complementary: for example, some emphasize parental involvement and community control, while others focus on the curriculum, the teacher, and the classroom.

The sponsor models were selected because they were in some significant ways unique. Nevertheless, the sponsors also share areas of common agreement. All seek to develop the child's academic abilities. All advocate such practices as reduced class size and small group and individual instruction, to be achieved by the use of teacher aides and classroom volunteers. All intend that learning be interesting and relevant to the student's environment. The sponsors also believe that the student's competence in academic skills is inseparable from his self-esteem, motivation, sense of autonomy, and confidence in success, and seek ways to achieve these affective goals as well as the traditional academic objectives. The sponsors do differ among themselves, however, in the priorities they attach to these objectives and in the sequence by which they pursue them.

Responsibilities for the Evaluation

In July 1968, SRI entered a contract to begin the longitudinal evaluation of the national Follow Through program. Other organizations also are participating in the overall evaluation of Follow Through. Bio-Dynamics, Inc., of Cambridge, Massachusetts, is evaluating health services (medical, dental, psychological, and nutritional). The NTL Institute for Applied Behavioral Science is studying the relationships between Follow Through projects and the local school systems and communities in a limited number of sites. The sponsors also have their own evaluation programs to assess the effectiveness of their models. Finally, many school districts also assess program effects against local objectives.

This report describes the SRI Follow Through evaluation during its first two years. Most of the data reported are drawn from the second year, 1969-70.

II SUMMARY OF FINDINGS

The findings of the evaluation to date are presented in five subsequent sections: (1) the categorization of sponsor approaches and the state of their project implementation, (2) effects of program participation on teachers and classrooms, (3) effects of program participation on home and family, (4) effects of program participation on children, and, finally, (5) some interrelationships among these.

The summary below follows a somewhat modified order. It begins with a review of the readiness for the different sponsor approaches to be assessed. Following that, the effects of program participation on children are discussed, since bringing about desired changes in children is the fundamental purpose of each program and of education itself. Following the discussion of program effects on children, effects on teachers and classroom procedures and effects on parents and families are presented so that Follow Through program objectives specific to classrooms and homes can be examined both independently and in relation to effects on children.

Sponsors and Projects

Project Selection

During 1969-70, 18 models with individual or institutional sponsors were testing their approaches in Follow Through. In addition, 16 projects were self-sponsored and 7 projects were parent-implemented without a secondary affiliation with an instructional model sponsor. For purposes of project classification, the self-sponsored and parent-implemented projects have been grouped as two distinct classes, thus making a total of 20 models. Six of the 18 sponsored models were new to Follow Through at the beginning of the 1969-70 school year. Thus, 12 more or less systematic models, plus the two more heterogeneous clusters of self-sponsored and parent-implemented projects, represented the number of approaches thought to be eligible for a systematic assessment of their processes and outcomes.

The data collection plan included several individual projects representing each approach. Where the number of projects was sufficient to permit selection, the projects chosen for the study sample included one or two projects that each sponsor considered an exemplar of his approach. The study sample excluded some projects where unusual difficulties had been encountered in implementation. The final selection included 89 projects representing the 20 different models. Among the 12 models whose performance was of greatest interest since they had had at least one year of implementation, the number of projects included in any one data collection activity ranged from a minimum of two in the case of one established sponsor who had but two projects, to a maximum of eight.

Evaluation policy, established jointly and agreed upon by the OE/Follow Through program office and SRI, dictates that individual sponsors not be contrasted to one another on the basis of outcomes from the first full year of program operation following the implementation stage. Such contrasts, it has been agreed, would be premature and misleading owing to differences among the sponsors on the variety of objectives they seek and, among objectives shared by most or all of them, to variations in the sequence in which objectives are sought.

Sponsor Grouping

For the present report covering Follow Through in the 1969-70 school year, the various approaches or models have been grouped into five broad classes. One class includes the self-sponsored projects and another includes the parent-implemented projects that do not have an affiliation with an instructional model. The three sponsored classes (Sponsor Groups 1, 2, and 3) are described briefly as follows:

(1) Sponsor Group 1 contains the most highly structured approaches. These sponsors make systematic use of stimulus-response and reinforcement learning paradigms, rely heavily on behavior analysis, use programmed instructional materials, and concentrate on academic and pre-academic skills.

(2) Sponsor Group 2 approaches follow learning models based on inquiry and discovery and seek to impart how-to-learn techniques rather more than factual substance, particularly in the earliest school years. Sponsors in this group emphasize humanistic values such as positive feelings of self-worth and respect and trust for others. The stimulation of curiosity and the encouragement of discovery are particularly prominent in approaches in the group.

(3) Sponsor Group 3 is more heterogeneous in approaches than the preceding two. As a whole, these approaches tend to be less systematic and more pragmatic, weaving elements from a variety of educational theory into coherent models. To characterize the approaches in Sponsor Group 3 as "unsystematic" does some

disservice to them individually but the models included in this grouping occupy an intermediate position between the more clearly opposing approaches of Groups 1 and 2.

Considering only the "mature" sponsors, five were classified in Group 1, three were classified in Group 2, and four were classified in Group 3. When all sponsors involved during 1969-70 are counted, one additional sponsor is added to Group 1 and five additional sponsors to Group 3. With the exception of one project represented in Group 3 at the non-entering first grade level, all the projects on whom both Fall and Spring data were obtained in 1969-70 and which, therefore, constitute the core of the pupil and other measures presented in this report, were the mature sponsors and self-sponsored and parent-implemented projects that had been involved in Follow Through for at least one year prior to 1969-70.

Project Implementation

Sponsors were asked to rate and rank each of their projects according to the status of its implementation at the end of the 1969-70 school year. Eight of the 12 sponsors responded, thus permitting implementation scores to be derived for those of their projects that were under study. Seventeen of the 32 projects thus scored were ones in which data had been collected both in the Fall and Spring of 1969-70. Thirteen of these 17 projects were judged by sponsors to be in the high half of their project sets according to their own criteria of status of implementation. It may be said with confidence, then, that the majority of the findings presented in this report are drawn from projects that are legitimate candidates for evaluation according either to the standard of time for implementation or each sponsor's own assessment of the project's readiness.

A final note on implementation comes from analyses of classroom observations in a subset of projects representing Sponsor Groups 1, 2, and 3. These data reflect a high level of implementation insofar as the sponsors' expectations that certain classroom characteristics would be observed were, in nearly every case, confirmed by independent observation. The average implementation score from the observations (based on seven projects and 29 Follow Through classrooms) was 85%, where 85% represents the "batting average" of confirmed expectations. Clustered into sponsor groups, the implementation scores ranged from 82% to 91%. No single sponsor was scored below 73% and only one classroom in 29 was scored below 50%.

Pupil Development

Two classes of measures were obtained on pupils at both Fall and Spring during 1969-70, and a third set of measures were obtained in the Spring on some of these children. Measures obtained on all pupils were a battery of achievement tests and two attitude scales, one of which sought to measure attitudes toward school and learning and the other to measure interpersonal feelings (pupil-to-pupil and pupil-to-teacher).

The battery of achievement tests used varied in specific content from one grade level to another and increased in difficulty with each grade level. Broadly, the achievement battery reflected verbal/linguistic skills, quantitative/computational skills, and perceptual/motor skills. Each of these areas in turn contained subclassifications; the data presented in this report sum all scores into a single battery total.

Additional measures on a subset of pupils were obtained in a pilot study to try out a variety of instruments so that measurement could be broadened to include indicators of non-cognitive growth on such qualities as school fearfulness, ethnic identity, locus of control, intrinsic and extrinsic sources of motivation, generalized school attitudes, and the like. The subset of children on whom these measures were obtained was a judgmental sample from only eight projects. Evaluation judgments based on these data would be inappropriate due to the character of the samples and the provisional nature of some of the instruments. They do, however, enrich and expand the protrait of Follow Through and non-Follow Through children and suggest some additional differences between the various models.

The findings support the generalizations made in the Précis:

(1) Some differences between approaches were evident when they were grouped into the broad sponsor classes according to their goals and instructional practices. This finding leads to the confident expectation that different patterns of outcomes associated with different approaches will become increasingly discernible and accessible to judgment.

(2) Different patterns of achievement and, to a lesser extent, attitude change can be related to a variety of personal and family characteristics.

The children whose performance is of greatest interest at this time in the evaluation of Follow Through are those who (1) were clearly poor and therefore eligible for Follow Through on the basis of poverty and (2) were in kindergarten and entering first grade. (In some school districts, kindergarten is the first year of regular school; in other school districts, first grade is considered the entering year.) These are the children--both Follow Through and non-Follow Through--to whom the immediately following paragraphs apply. In other sections of the report, information about other grade levels and about children who would not be classified as poverty-eligible for Follow Through on the basis of family income and family size also are reported.

Achievement Outcomes by Sponsor Groupings

Children in the sponsor group whose approach is most structured and concentrates most explicitly on developing academic and pre-academic skills showed a consistently higher level and rate of achievement measured by the pupil achievement test battery. This was true among poor children at kindergarten, where Follow Through children began the year below their non-Follow Through counterparts and finished the year significantly ahead. It was also true at entering first grade, where a similar pattern obtained.

The pattern was not quite so consistent for Sponsor Groups 2 and 3. At both grades in Sponsor Group 2, Follow Through children began and ended the year behind their non-Follow Through comparison group. In Sponsor Group 3, kindergartners began and ended the year ahead of the non-Follow Through children but did not gain as much during the year as the non-Follow Through children. At entering first grade, in contrast, they began and ended the year behind but gained more than the non-Follow Through children during the year.

No comparisons at the entering first grade would be justified for Sponsor Group 4 since only one project represented this sponsor group. More projects in Sponsor Group 4 operated at kindergarten level, however, and these Follow Through children compared very favorably with their non-Follow Through counterparts; they began and ended the year ahead and gained significantly more during the year.

Attitude Changes by Sponsor Groupings

Measures of children's attitudes toward school showed changes favoring Follow Through; these differences approached statistical significance at the kindergarten and reached it at entering first grade. The pattern from one sponsor group to another, however, was not consistent. At kindergarten, none of the sponsor groups displayed statistically significant changes, although in three of the four, the direction of the change favored Follow Through. A similar pattern obtained at entering first grade where, although three of the four sponsor groups showed shifts that favored Follow Through, none were statistically significant.

The measure of children's attitudes toward others--the interpersonal feelings scale--did not show statistically significant differences when compared with non-Follow Through at either kindergarten or entering first grade. In one sponsor group a significant change favoring Follow Through was identified but this was the only instance in all groups at both grade levels where the difference between Follow Through and non-Follow Through was significant.

Changes Related to Poverty, Preschool Experience, and Services Received

By legislative and program intent, Follow Through is for poor children with preference to those who experienced Head Start (or its locally defined equivalent) prior to enrollment in regular school. Once enrolled in Follow Through, a child may receive the full array of services that the Follow Through guidelines prescribe or he may receive only some of them. (For example, the Guidelines permit some participants to be drawn from families that do not fall within the OEO poverty index but only children from low income families are eligible to receive the full range of services.) Thus, level of poverty, type of preschool experience, and range of services received constitute three central policy variables in the evaluation of Follow Through.

Against the criterion of achievement in verbal, quantitative, and perceptual-motor skills, Follow Through is reaching these intended program objectives. Kindergartners in Follow Through in 1969-70 were significantly superior to their non-Follow Through counterparts both on measures of absolute achievement and in the rate at which they gained during the year. The greatest differences between Follow Through and non-Follow Through kindergartners were among those children who were most poor--the primary group to which Follow Through is directed.

Prior Head Start experience also was related to achievement during the kindergarten year. Former Head Start children who participated in Follow Through showed significantly greater gains during the kindergarten year of regular school than did former Head Start children who did not participate in Follow Through. Follow Through children who had not participated in Head Start also gained more during their first year of school than did non-Follow Through children who had not had Head Start. Finally, children who received full Follow Through services showed greater gains than children who received less than full services.

The picture presented by the achievement test scores was not quite so clear at entering first grade as at kindergarten. At entering first grade, Follow Through children began the year behind their non-Follow Through counterparts and did not overtake them. They gained more during the year, however, and the difference between Follow Through and non-Follow Through in these gains was statistically significant.

When Follow Through and non-Follow Through children at entering first grade were subclassified according to their preschool experience, level of poverty, and extent of Follow Through services received, the differences between Follow Through and non-Follow Through children were not so clearly in favor of children who were most poor, received full services, and entered Follow Through from Head Start. In all comparisons, these children gained more during the year but only the subgroup of children that had experienced Head Start also finished the year at a level of measured achievement greater than their non-Follow Through comparisons.

Non-Cognitive Characteristics

Measures on a variety of non-cognitive variables were available on a selected subset of about 845 children reflecting four sponsor groups. The resulting profiles varied across sponsor groups, further supporting the expectation that it will become possible to differentiate among the approaches as the longitudinal experiment continues. Some features of these measures--bearing in mind that the sample was small and did not represent all of the Follow Through sponsors--were notable:

(1) Follow Through children in all approaches showed less fearfulness of school than did the non-Follow Through comparison groups.

(2) Follow Through children in all approaches reflected greater concern for intrinsic than extrinsic sources of motivation.

(3) Follow Through children in all approaches displayed less anxiety in a puzzle-solving situation observed by an adult with whom they were unfamiliar.

(4) Follow Through children at all grade levels in nearly all approaches were more likely to be rated high by teachers in behavior that was adaptive to classroom learning.

(5) Follow Through children at nearly all grade levels in all approaches received higher scores on task competence in the puzzle-solving situation than did the non-Follow Through children.

Differences between approaches were evident on measures of internalized acceptance of responsibility for success and failure and on attitudes toward school.

Homes and Families

Many differences between Follow Through and non-Follow Through families were identified through interviews during 1969-70.

All Follow Through approaches seek to increase the extent to which parents become aware of and involved in school activities that affect their children. The evidence is unequivocal that progress is being made toward these objectives. Follow Through parents consistently exceeded parents of non-Follow Through children in their awareness of classroom activities, their contacts with school personnel, their visits to the school or classroom, their talks with teachers and other school staff, and their general satisfaction with the child's school. In addition, Follow Through parents tended to report a greater sense of influence on school programs, or a feeling that their ideas matter to those who run the schools. Finally, Follow Through parents were more likely than non-Follow Through parents to be active in clubs or organizations not related to the schools.

While it is true that Follow Through parents exceeded non-Follow Through parents on all the measures mentioned above and that most differences were statistically significant, the extent of absolute difference often appeared to be small. For example, about half of all the Follow Through mothers reported visiting their child's classroom during the year. While this may seem disappointing to advocates of Follow Through parent participation in classrooms, barely 40% of the non-Follow Through parents had visited their child's classroom at all and among these parents, the average number of visits was less than among Follow Through parents.

Despite the fact that many differences were identified between Follow Through and non-Follow Through parents, there are not yet clear indications that these differences are correlated significantly with children's achievement or their attitudes about school. Attempts to establish such relationships with the data from 1969-70 were disappointing. Based on the 1969-70 information, it is not possible to identify obvious and consistent associations between parent behavior and child performance despite the fact that desirable consequences of Follow Through participation are being displayed by both parents and children.

Poverty and its concomitants are powerful correlates of both family life styles and children's behavior. Family life styles (e.g., the number and kind of mutual help relationships between parent and child) differ according to level of poverty for both Follow Through and non-Follow Through parents. When level of poverty is held constant, no clear differences are evident between Follow Through and non-Follow Through families. However, when poverty is held constant, there are detectable differences, and statistically significant ones, between Follow Through and non-Follow Through children in their school performance. For example, the greatest differences between Follow Through and non-Follow Through children in measured achievement tend to occur among these children who are most poor.

To conclude it would be premature, but it appears that the influence of Follow Through on children's performance in school is affecting some of the conventional patterns of association between poverty and school performance. Over the longer term, as cumulative data become available on the same children and families, one may hope that more systematic relationships linking Follow Through involvement to both life style variables and children's performance in school may be identified. For the present, the observed differences between Follow Through and non-Follow Through parent and family characteristics must be defended as desirable in their own terms and not because of their demonstrated relationship to children's school achievement.

Teachers and Classrooms

The data from 1969-70 provide some important linkages between the activities of Follow Through sponsors, the processes followed in the classroom, and the performance of children. The classroom observation procedure was found useful in characterizing classroom processes and, as already mentioned, showed clearly that the intended processes were being implemented in nearly all the classes observed.

The kinds of activities that were most prominent in these classrooms are consistent with the patterns of pupil performance that were identified. Children from classrooms in which the greatest attention was given to pre-academic and academic skills showed the greatest gains in achievement during the year. Classrooms in which special emphases were given to exploratory behavior and questioning were more likely to be characterized by pupils asking more questions, being more open with adults, and interacting more with materials.

It is not economically feasible to observe several hundred classrooms for sufficiently long periods to characterize the instructional processes that are followed and the beliefs and assumptions that underlie teachers' behavior and their use of materials. For that reason, a complementary approach to describing classroom process was attempted through self-report questionnaires from teachers. A full analysis of these data is not yet complete. Preliminary evidence suggests, however, that the two approaches--direct observations and self-report surveys--complement one another usefully and provide increasingly reliable and valid means for characterizing classrooms according to process variables.

The survey responses from teachers do suggest some differences among the approaches in the likelihood that they will be embraced with enthusiasm by teachers. Generally, all Follow Through teachers were complimentary toward Follow Through and expressed satisfaction with the kind and degree of support that the sponsors were providing. There were differences among teachers according to sponsor group, however. For example, a higher proportion of teachers in Sponsor Group 1 than in other sponsor groups saw much advantage to teaching in Follow Through. At the same time, however, a higher proportion of teachers in Sponsor Group 1 were more likely to see disadvantages to teaching in Follow Through or were unwilling to commit themselves ("don't know"). The proportions of teachers in both Sponsor Groups 2 and 3 were similar to each other and different from Sponsor Group 1 teachers--they were somewhat less likely to see great advantages in teaching in Follow Through but also less likely than teachers in Sponsor Group 1 to see disadvantages. These differences, although suggestive, fell short of statistical significance.

A related pattern was noted among teachers according to grade. Consistent with the emphasis in 1969-70 on the entering grades as the most important ones in the longitudinal experiment, teachers of kindergarten and, to only a slightly lesser extent, teachers of entering first grade were more likely than teachers of higher grades to see much advantage to teaching in Follow Through. These differences by grade level, although encouraging because of their consistency with program emphasis, also fell just short of statistical significance.

Follow Through teachers differed from non-Follow Through teachers in many ways. Although clear relationships between these characteristics and children's performance are not yet apparent, as a group Follow Through teachers tended to be somewhat younger, less likely to hold tenured status, to have taught for fewer years, and less likely to hold the highest level of certification. They were not different, however, in their academic background or the proportions from ethnic minorities.

All of the Follow Through approaches are demonstrating effects on teachers, both through changed practices and changed perceptions of what is possible and desirable. For example, Follow Through teachers are more likely than non-Follow Through teachers to assign high importance to such activities as home visits by the teacher or other school personnel and to concede a value in direct parent participation as classroom volunteers and aides. The effects of Follow Through on specific instructional practices are closely related to the style of the program in which the teachers participate. Each program sponsor has influenced the teaching style and practices of teachers who are implementing the various models but the specific influences are as diverse as the approaches themselves. Generally, however, Follow Through teachers show markedly greater satisfaction with the progress their pupils are making than do non-Follow Through teachers at the same grade levels.

III THE PLAN AND PROCEDURES OF THE FOLLOW THROUGH EVALUATION

Aims and Purposes of the Evaluation

The ultimate purpose of the longitudinal evaluation of Follow Through is to develop evidence to help guide policy decisions about the design and implementation of educational and social programs intended to ameliorate the impact of poverty on the development of young children.

Broadly, the evaluation seeks to identify and describe the effects of program processes upon people and institutions as the program operates in particular environmental settings. The primary focus of the Follow Through evaluation is upon the child, since the program exists to increase his chances for a productive, self-confident and constructive life. But the evaluation also gives extensive consideration to elements in the child's environment that influence his development: his family, his neighborhood and community setting, as well as his school. The strength of Follow Through's belief in the importance of these elements is demonstrated by the variety and comprehensiveness of the services required within any one program and insistence that parents and community residents participate in policy making and program management.

Since the child learns and grows in an interdependent system comprised of home, school, and community, the evaluation seeks to identify and obtain information about the influence of all these elements on the development of the child. A specific goal of the evaluation is to discover those factors in both the program and the environment that are associated with the outcomes and thereby to identify those programs and practices that merit dissemination and possibly wider adoption.

The full scope of Follow Through, and of the evaluation, may be appreciated best if the program is perceived not only as an experiment in early childhood education, but also as an effort to induce the social changes that will reinforce and amplify the educational efforts so that they may succeed and persist.

In terms of its origins and funding, Follow Through is one of the community action programs of the Economic Opportunity Act. The Follow Through program seeks to bring about changes not only in the children but also in adults and institutions, in the belief that if the program is to achieve lasting effects, teachers, schools and the community will have to change. It is the task of the evaluation to identify the changes that occur as a result of Follow Through, and to discover the means by which they come about.

The evaluation considers the Follow Through program on three levels. First, since Follow Through is a federally funded program that provides specific instructional and social services and methods of implementing them, its effectiveness must be evaluated in terms of the goals of the legislation that established it. The central questions at this level include:

(1) Are poor children benefiting from participation in Follow Through?

(2) Are the benefits of participation related to the kind and extent of Follow Through services received?

(3) Does participation in Follow Through reinforce and extend the benefits of prior participation in Head Start?

Second, on the level of the sponsor models, Follow Through's strategy of planned variation seeks to test the relative efficacy of a variety of somewhat different social and educational programs in the natural laboratories of communities throughout the country so as to develop and identify innovations in methods of improving early education that deserve wider adoption. Here, the essential issues revolve around the differential effects of participation in one program approach or model in contrast to others.

Third, both the national program and the sponsor models become modified in the process of being implemented in the unique socio-cultural-political context of each local project. As a result, the evaluation also considers each local project as a distinct educational experiment. On this level, the task of the evaluation is to develop information useful in judging the extent to which Follow Through is bringing about desirable changes in students, adults, and instutional arrangements at the local level.

The Strategy and Design of the Evaluation

The Follow Through program that is being evaluated cosists of:

(1) The Follow Through Guidelines which state both the elements that must be provided in each Follow Through project and the overall goals and objectives of Follow Through.

(2) A set of project planners and implementers--the sponsors--who have designed educational approaches to meet the requirements of the Follow Through program. Collectively, the sponsors' programs embody a wide range of alternative approaches for achieving the objectives of Follow Through. Furthermore, the sponsors prepare detailed programs and teaching materials, train and provide continuing assistance to teachers, and work with school districts in which these approaches are to be implemented.

(3) A set of school districts that wish to participate in the Follow Through program under the conditions Follow Through has stated for such participation. These districts include many areas across the country in which poor children live.

(4) A selection process in which alternative approaches are presented to the school districts who then select, with OE/Follow Through staff guidance, the sponsor whose approach they wish to have implemented in their district.

(5) A selection process within school districts in which the schools, teachers, and children who are to participate in Follow Through are identified by the school district.

The Follow Through evaluation begins at the end of the foregoing steps which are designed to assure that highly motivated sponsors and receptive districts have been paired and agree on the broad goal of producing excellent educational programs.

The first year of any sponsor's participation in Follow Through, and usually his first year in a new school district, are viewed as implementation years. Summative evaluation is unjustified during this period because too many changes are likely to be made as implementation procedures are refined.

The different sponsors have different objectives that they wish to achieve at different times. A one-year evaluation period could not serve as a means of comparing sponsors on essentially the same objectives since some sponsors expect to achieve certain goals more quickly than others.

To reduce disagreement on goals, the period of the evaluation is defined to be the duration of Follow Through for each group of children. For children entering school and Follow Through at first grade, this period is three years; for those entering at kindergarten, the period is four years. The first such "cohort" began with children entering school and Follow Through in 1969-70. For that cohort, the design is before-after with "before" occurring in autumn 1969 and "after" occurring in late Spring 1972. The second cohort began in Fall 1970.

Children in relatively few districts were tested in Spring 1970, both because of the high cost of testing and because it was an intermediate year for both cohort groups. Hence, this report is essentially a progress report on the Follow Through evaluation and no comparison of individual sponsors is made.

The non-random choices of districts and allocation of districts among sponsors essentially implies that any between-district variance is likely to have biases of unknown size and direction. Also, each district is in a sense a local society; many variables depend essentially on the socioeconomic and administrative conditions prevailing in that district. Hence, it seemed reasonable to require that comparison groups be selected for each district and that conclusions be largely based on intra-district comparisons.

Within districts, the allocations of schools, teachers, and children to Follow Through are made prior to the evaluation. Any choice of children for purposes of comparison must be from those not selected for Follow Through. Since it appeared reasonable that the chances would be high that Follow Through would affect non-Follow Through teaching within the same schools as those in the Follow Through program, comparison classrooms are selected from schools not previously selected for the Follow Through program. Especially in smaller communities but to some extent in all communities, this means that it is impossible to simulate either stratified random selection or overall random selection. Thus, within each district, the analysis must deal with a quasi-experiment.

Goals and Standards

The evaluation design seeks to identify changes brought about by the Follow Through program. In order to assess program effectiveness, it is necessary to measure these changes against the goals of the program. The SRI staff has thus far taken the pragmatic position that intended program outcomes or objectives are to be accepted as stated by the program proponents. However, problems in formulating the goals against which to judge the changes derive from at least two sources.

The first is the fact that the Follow Through program includes not one but many varied sets of goals. Within the goals of the national program, each sponsor has objectives that differ to some extent from those of the other sponsors, and the goals of the local projects also vary from place to place. The SRI evaluation seeks to comprehend all of these objectives, identifying the aims of various stakeholders in Follow Through and determining whether the most salient aims of each are being achieved. Further, the evaluation seeks to measure unintended as well as intended effects. The evaluation plan remains flexible in order to incorporate the changes in objectives that occur over time.

The second source of difficulty in formulating goals and assessing change is that stakeholders in Follow Through state their objectives on many levels and in different terms. The overall aim of Follow Through, for example, may be stated broadly as "improving the life chances of children of poverty." This goal is long-range, general, abstract, and societal; it must be translated into shorter term and more concrete instructional and social objectives to permit an assessment of the extent to which the program achieves it. In addition, the more immediate, concrete objectives also must be restated in terms that identify acceptable evidence of their achievement. As a result, a lengthy process of redefining and restating objectives has become a part of the Follow Through evaluation.

Quasi-experimental Character of the Evaluation

As indicated above, the operational requirements of the Follow Through program limit the choice of evaluation design. Randomization has not occurred in the assignment of students, teachers, classrooms, schools, or projects. The school districts nominated to receive Follow Through programs were chosen judgmentally and selected according to criteria determined by OE. Often, individual schools were assigned Follow Through programs by district administrators, and teacher participation was seldom, if ever, determined randomly. The local projects also made purposive decisions about which sponsor model to adopt. As a result, the evaluation cannot be based on a before-after design characterized by random assignment of subjects to experimental and control groups.

It is more appropriate to view Follow Through as a research and development program than as a service program, but the Follow Through evaluation cannot be thought of as an experiment in the strict meaning of that term. More accurately, Follow Through nationally must be regarded as quasi-experiments in several natural settings; data collection procedures can be planned and scheduled but little or no control is possible over the specification and scheduling of experimental treatments.

Perhaps the most critical consequence of the quasi-experimental character of Follow Through from a national evaluation viewpoint is that each individual project must be treated as essentially a separate experiment. Thus, in each of the projects that constitute the basic study sample, non-Follow Through comparison groups must be identified and their collaboration induced so that it becomes possible to contrast children of similar characteristics, some of whom are participants in Follow Through and others of whom are not. After-the-fact selection of non-Follow Through comparison children and families means extensive collection of descriptive information so that analytic adjustments can be made to help offset the problems of matching that are an inevitable consequence of quasi-experimental designs in natural settings. For example, face-to-face interviews were conducted with nearly 15,000 parents in 1969-70 to obtain information about home and family background of both Follow Through and non-Follow Through children, so that comparisons of changes attributable to Follow Through participation could be identified and better understood.

In interpreting the findings in this report, it is important to be aware of the limitations imposed by two characteristics of the Follow Through program that complicate the evaluation design: (1) the large number of different approaches and (2) the manner in which participating schools are selected and the pairings between school districts and experimental approaches are determined. These limitations dictate caution in drawing inferences about the impact of program participation. The SRI evaluation staff and, indeed, the OE/Follow Through staff, recognize and accept these limitations as part of the price that must be paid when innovating programs are introduced and evaluated in the real world.

Appendix 2 lists all projects and those selected for collection of data for the evaluation. For each set of data there was a somewhat different set of criteria for selecting projects as sources (e.g., implementation status of sponsor's approach, sample size and mix needed for analysis, budgetary limitations, sponsor representation, and willingness of particular communities to cooperate).

Comparison Groups

The essentially nonrandom character of Follow Through as an experiment makes it particularly difficult to obtain similar groups of non-Follow Through students to serve as control groups with whom to compare the experimental classes. The term "control group," in fact, is not as appropriate to the naturalistic setting of the Follow Through evaluation as the term "comparison group" which more accurately defines the situation to which the evaluation must accommodate. In a social action program for children where the primary criterion of eligibility is low income of the child's family, it is seldom possible (and perhaps not ethically desirable) to employ random methods of assignment that would deny (or appear to deny) some eligible children access to the program. The limited resources of the Follow Through program have in practice diminished this problem of pupil selection, for funding clearly is not sufficient to support programs that could accommodate all poor children. It remains difficult, however, to find acceptably equivalent groups of nonparticipating students. In larger urban schools that have Follow Through programs, economic levels differ significantly and other classes may be influenced by the program. In smaller schools and rural areas, often most or all of the eligible students are participants, making it necessary sometimes to go outside the Follow Through school district to find comparison groups: in these cases, the likelihood of differences in economic level and ethnic, cultural, and educational background increases.

SRI has sought comparison groups from schools contiguous to the Follow Through project that were similar in socioeconomic and ethnic status, and in Head Start experience. The evaluation has used demographic data collected from the schools and from parent interviews to match Follow Through and comparison groups and to identify any remaining differences. The problems of comparability have been dealt with by analytical and statistical procedures, such as stratification by independent variables or covariate adjustments using economic-demographic factors.

Collection of Data

The major components in the Follow Through program are the children, the parents, the teachers (including aides), other school personnel, the community residents, local organizations, and the sponsors and their programs. The evaluation requires information about each and about their interrelationships. Initial descriptive data are required to provide a baseline for comparisons, and other measures are needed to identify the program's effects.

The means of data collection are direct observation, surveys (interviews, mailed questionnaires, and rating scales), and pupil tests.

Instrumentation

Eight classes of instruments have been assembled or developed to collect the needed data:

1. Achievement tests for pupils
2. Non-cognitive measures for pupils
3. Interview forms for parents
4. Questionnaires for teachers and aides
5. Rating scales for sponsors to evaluate their programs at local sites
6. A program implementation review
7. Direct observation of classroom processes
8. Case studies of selected communities.

At the end of the 1969-70 school year, the first five data gathering approaches were operational, while the latter three remained at various developmental stages. The evaluation findings for the years 1968-69 and 1969-70 presented in this report, therefore, derive largely from the data collected by the pupil achievement test battery (including some attitude measures), the parent interview, the teacher/aide questionnaires, the sponsors' evaluations of projects, and the program implementation review.

The instruments have developed at different rates and become operational at different points in time. Since academic achievement tests provide one obvious measure of educational program accomplishment and are well grounded in much previous research, the pupil achievement test battery could be rapidly developed and was first administered in the Fall of 1968. However, academic achievement measures alone are too narrow to embrace all objectives of Follow Through; therefore, non-academic measures for pupils had to be developed, starting in 1968-69.

The program implementation review, which provides demographic information about the participants, and program locations and implementation, first reached the field in June 1969. Means of measuring process and change among adults have been under development since the beginning of the evaluation but have not matured at the same rate as other measurement development efforts. After protracted discussion, trial, and revision, the parent interview was first used in January 1970. The teacher/aide questionnaire was first used in the Spring of 1970. Sponsors' assessment of teachers and sites based on rating forms was first used during the Summer of 1970.

Pupil Achievement Test Battery. Out of discussions in mid-1968 with the sponsors and OE staff evolved a strategy in which a core of measures that met with general agreement (or lack of strong disagreement) would be supplemented by additional measures suggested by the individual sponsors. The core measures for 1968-69 were selected from nine existing tests:

1. Lee-Clark Reading Readiness Test
2. Metropolitan Readiness Test
3. The Pre-School Inventory
4. Six tests--Shape Names, Alphabet, Numerals, Prepositions, Pre-Mathematics and Pre-Science--from New York University's Early Childhood Inventories Project.

The first three (especially the first two) are well known standardized tests. The Early Childhood Inventories tests were new and experimental in 1968.

Items from these nine tests were included in five booklets of questions, four of which were designed for administration to groups of approximately seven students at a time and one to be administered to each pupil individually. To reduce the number of questions asked of each student, the source tests were stratified and divided into three forms or versions, so that each student was exposed to about one-third of the total items (although some items appeared in all three forms). This test battery was given to kindergartners and first graders.

The Fall 1968 achievement test results indicated that the basic battery did not provide an adequate range at the top for first grade, and changes were made to correct this deficiency.* Other changes, and the addition of items suggested by sponsors, resulted in a test battery for 1969-70 of items or subtests drawn from the tests listed below and administered to the grades shown (one or two rather than three forms were used for each grade level):

1.	Lee-Clark Reading Readiness Test	K, entering-1
2.	NYU Early Childhood Inventories (Alphabet, Numerals)	K, entering-1
3.	Pre-School Inventory	K, entering-1
4.	Metropolitan Readiness Test (Form A)	1, 2
5.	Stanford Achievement Test (Primary I, Form Y: Word Reading)	2
6.	Metropolitan Achievement Test (Primary II, Form A: Arithmetic Computation)	2
7.	Comprehensive Tests of Basic Skills (Form Q, Level 1) Reading Vocabulary and Arithmetic Computation Others	3, 4 4
8.	Wide Range Achievement Test	All grades
9.	Items from sponsors	1, 2, 3

---

* See Appendix 4 for a detailed discussion of the evolution of the test battery.

In addition, attitude items submitted by sponsors were administered to all grade levels.

Although the battery included questions dealing with pupils' attitudes and study skills, most of the pupil measures obtained in this battery relate directly to performance in traditionally accepted areas of academic achievement such as language and computational skills.

Pupil Non-Cognitive Test Battery. The non-cognitive test battery is being developed to provide an adequate means for assessing the child's development in areas other than traditional achievement and academic skills such as reading and arithmetic. The non-cognitive area is concerned with such subjects as motivation, curiosity, creativity, self-confidence, and social skills.

The aims of both the Follow Through program and the sponsors' approaches encompass more for students than academic achievement.

Unfortunately, there are few well researched and validated procedures suited for ready application in the Follow Through setting. Non-cognitive development goals of Follow Through sponsors often are stated in the form of pre-operational verbal labels such as persistence, autonomy, and curiosity rather than in specific, measurable terms; and non-cognitive goals are not likely to be implanted in a curriculum as are traditional academic matters. Yet such goals are especially significant and especially sensitive to the ethnic minority groups which are heavily represented among Follow Through participants, and it is therefore particularly necessary to develop measures of such qualities which these groups feel are essential to their advancement. As a result, a major developmental effort has been necessary to assemble a non-cognitive test battery.

The present battery was field tested in the Spring of 1970 with 845 students in 45 classrooms at 8 project sites. The specific non-cognitive objectives measured by the battery derived from the goals stated by the Follow Through Program Guidelines, by sponsors, and by spokesmen for the ethnic minorities. The general aim of the battery is to assess the effectiveness of the program in developing in pupils confident and optimistic attitudes toward themselves, toward learning, and toward participation in educational institutions, and in diminishing feelings of anxiety, impotence, and hopelessness. Eight specific areas were selected for measurement:

1. Ethnic identity
2. Attitudes toward school
3. Task orientation
4. Curiosity
5. Autonomy
6. Self-esteem
7. School fearfulness
8. Locus of control.

Further details regarding the non-cognitive pupil test battery are contained in Appendix 5.

Parent Interview Survey. A major survey of parents of children tested in Follow Through and comparison classes was undertaken between January and March of 1970. Its major purpose was to identify certain attitudes and actions of parents and to obtain information about demographic and other characteristics of the household. The survey concentrated on collecting data that might be related to the development and educational progress of the child, might change over time as a consequence of participation in Follow Through, and would be helpful in estimating the comparability of Follow Through and non-Follow Through children. Information obtained by the parent interviews falls into ten general categories:

1. Interest in and knowledge about Follow Through
2. Participation in policy making with respect to educational programs
3. Parent contact with the school and its staff
4. Feelings of efficacy in relation to the school
5. Feelings of being able to control one's life
6. Support and guidance of the child with respect to educational programs
7. Extent of educationally relevant stimulation in the home environment
8. Aspirations for the child's future
9. General "life style" and attitudes
10. Demographic descriptive information.

The data collected from parents provide a basis for determining the extent to which family characteristics and changes in them are related to other factors such as the child's performance in school, teacher attitudes and behavior, and the organization and administration of the school.

All parent interviews took place in the home. Development of the interview form began late in 1968 and systematic field testing occurred during the Summer of 1969. By that time it was evident from the 1968-69 achievement test data that much more accurate and extensive demographic data than were available from the schools were needed, to estimate the equivalence of the comparison groups. Also, to provide comparative evaluations of sponsors, it was necessary to include a sample from each sponsor's projects sufficient for this purpose. As a result, the number of parent interviews required was large. Over 15,000 potential respondents were located, and interviews with over 14,000 in 49 communities with a total of 65 Follow Through projects were completed and used in the analysis. The components of the sample were:

Parents of entering-grade pupils	Percent
Follow Through	41%
non-Follow Through	23
Parents of pupils beyond entering grade	
Follow Through	8
non-Follow Through	2
Parents of fourth graders	26
Total	100%

The data from parents of grade four pupils are not included in current analyses: they were gathered for this last generation of children who could not have experienced either Head Start of Follow Through to provide future comparisons with present Follow Through children when they reach the fourth grade.

In the long term plan for the evaluation, parents would not be reinterviewed until the Spring of the year in which their children complete the third grade. Shorter term effects of Follow Through participation are also important, however, so the overall plan also calls for interviews with some parents more frequently.

Additional information regarding the parent survey is contained in Appendix 6.

Teacher/Aide Questionnaires. A survey of teacher practices and attitudes, under development during 1968-70, was administered during the Spring of 1970. The teacher questionnaire (described fully in Appendix 7) included questions in the following areas:

1. Demographic information and background
2. Classroom practices
3. Availability and use of equipment and materials
4. Educational goals for children
5. Information and attitudes about home visits and parent participation in the classroom
6. Knowledge about Follow Through, manner of involvement with the program, and opinions about its effectiveness
7. General assessment of pupil progress.

A similar, shorter questionnaire was also given to classroom assistants or aides.

Responses were received from approximately 90% of the sample of Follow Through teachers and 80% of the non-Follow Through teachers who received the questionnaire. These data are useful primarily for exploring the relationships between teacher characteristics, attitudes and classroom practices, and pupil development.

Sponsor Evaluation of Teachers and Sites. The sponsors themselves are best qualified to judge the extent to which their approaches are being implemented locally as intended. In July 1970, therefore, the sponsors were asked to assess the implementation of their programs in two ways.

First, the sponsor was asked to evaluate each of his local projects according to his overall satisfaction with the project's development, either by ranking his projects from most to least successful or by placing each on a scale that ranked the degree to which he felt his model had been implemented. Second, each sponsor was also asked to rate each of his teachers according to those criteria that defined acceptable teacher performance in his model. Three ratings were requested: the level of functioning achieved by the end of the 1969-70 school year, the teacher's growth during the same year, and expectations of further growth during 1970-71.

The sponsor evaluations supplemented their formal program descriptions as a means of characterizing the various models, provided an additional set of measures that could be correlated with other indicators of project outcome, and, by identifying notable local results, suggested locations for more intensive investigations to seek the reasons for unusual results.

Program Implementation Review. The program implementation review collected basic data about participants and program implementation at each project site. Demographic information about students and staff, the socioeconomic status of students and their families, numbers of classrooms, schools and class size, the criteria used in the selection of students and staff, and data about delivery of services were collected. The program review survey was purposefully constructed with reference to the Follow Through Program Guidelines in order to compare actual with intended practices and therefore placed particular emphasis on, for example, the composition and activities of the PAC.

The program review accumulated information from rosters of students and Follow Through personnel provided by the schools, and from interviews with the Follow Through coordinator and the PAC chairman. The 1968-69 review included interviews with two teachers at each grade level at each project, and an interview with the person most knowledgeable about the Follow Through health program; in 1969-70, these functions were assumed by the teacher/aide questionnaires and by the Bio-Dynamics Study of health services, respectively. Also, as part of the 1969-70 review, both the Follow Through coordinator and the PAC chairman were asked to describe their goals for the Follow Through program and for PAC, and to suggest the kinds of evidence that would show these goals were being achieved.

Classroom Observation. The classroom observation instrument provides a structured description of what takes place in the Follow Through classroom. Its purpose is to make a record of classroom activities, the classroom environment, and the interactions between the teacher and aides and the children, and among the children themselves. This observation instrument was developed to focus in particular upon instructional methods, interpersonal interactions, and classroom atmosphere in the ways necessary to describe the various sponsor models.

The development of this procedure for describing both processes and outcomes through direct observation began in the Fall of 1968. By the end of the 1968-69 school year, a trial version was tested in a small number of classrooms; it showed promise for describing the affective climate of classrooms, their physical environment and arrangement, and the activities conducted in them, but left much to be desired in its capacity for describing process variables.

The rate of development was accelerated in Fall 1969. Particularly useful assistance was provided by sponsors and valuable counsel was received from advisers to SRI. By early April 1970 the classroom observation procedure had been refined and pretested sufficiently to warrant wider application in Follow Through locations that also shared a Head Start planned variation experiment.

Each classroom in the observation sample was observed for three full days, for two successive days by one observer and for one day by a second observer. Approximately every 15 minutes, the observer filled in a classroom activities checklist, a five-minute interaction schedule, and a five-minute summary rating. As opportunity permitted, outdoor activities were observed and recorded separately. At the close of the observation day, a summary rating of the classroom environment, the physical arrangements, and the equipment and materials available was made.

The classroom activities checklist yields data about what each adult in the classroom is doing, the size of the groups of children, and the nature of the activities in progress. The five-minute interaction observation has four columns for recording who does the action, to whom is it done, what is done, and how is it done. "What" is done includes such actions as helping, asking, teaching, observing, praising, giving corrective feedback, or rejecting. The "how" of the action includes both its affective quality and the method of correction or control: for example, happy, sad, or angry; praise, guidance, or punishment. The five-minute ratings incorporate the level of attention, creativity, and respect that adults show toward children. The outdoor observation attends to four areas: the variety of activities, teacher directiveness, child independence, and the nature of the interactions between children. The summary of the classroom environment assesses the levels of courtesy, friendliness, confidence, and independence, and the manner in which any disruptive behavior is handled.

The classroom observation instrument, as a record of the actual instructional process, allows validation of the perceptions of teachers, parents, and school personnel as recorded through other instruments. It is part of the effort to establish the connections between the methods by which students are taught and the changes that take place in them. A similar observation instrument is being used in the SRI evaluation of the Head Start experimental Planned Variation program.

The Follow Through classroom observation instrument was applied in some 60 classrooms at 8 projects in the Spring of 1970, and has become an integral part of data collection for 1970-71.

Community Studies. The community studies seek to document the effects of Follow Through on institutional relationships, particularly those involving educational institutions. They address new patterns of relationships among parents, school staff, the local community, and the various formal and informal community agencies that occur when Follow Through enters a community. Such changes are described within the economic and political context of the specific site. These studies also take into account the inputs, new roles and new institutional components which Follow Through introduces into the school and community--the Follow Through Coordinator and the Policy Advisory Committee, the sponsor and the Office of Education consultants, and even the presence of the evaluation. The studies also collect some historical, social, and demographic background information to provide a context within which to interpret these changes. The case study method was adopted because of the desire for a holistic and contextual view of such a complex phenomenon as Follow Through.

During 1968-69 studies were conducted at three sites: San Diego, California, Pulaski County, Arkansas, and Cleveland, Ohio. During 1969-70, the first two were continued and three more added: San Jose, California, St. Martin Parish, Louisiana, and McDowell County, West Virginia. These sites were selected to represent various geographic areas, types of communities, and modes of origin of Follow Through programs. These studies have been conducted by teams of two research associates living in or near the community, the senior member an experienced social scientist and the associate member experienced in a research-related field but having less formal academic training. The teams gathered data through interviews, record searches, library research, and observation.

Project and Person Data Base

Decisions about the amount of data to collect have been governed by a number of important considerations. Foremost are the requirements imposed by the need for adequate size for the statistical methods employed in the analyses. The data being analyzed must include a sufficient number of projects from each sponsor upon which to base evaluation of the sponsor's program, and a representative variety of projects upon which to base evaluations at the project level. The data collected at each project and for each sponsor is cumulative, in that the amount of data available increases each year; therefore, certain analyses by project and by sponsor will be possible at the end of four years which are not possible now. The expenses of data collection are powerful reasons for keeping the numbers small. But the non-random nature of Follow Through as an experiment requires that the number of cases be large. Also, the attrition of subjects that inevitably occurs in a longitudinal study over three or four years imposes an even greater need for a large initial number of cases.

Approximately five or six districts or projects per sponsor have been deemed desirable to provide a variety of settings in which each sponsor's program is implemented. A smaller number of districts per sponsor would be too few given the large variety of environmental conditions that interact with the sponsor programs; a larger number would be too costly. Among the "mature" sponsors in 1969-70, the actual number of projects ranged from two (maximum possible in one sponsor case) to eight (about half of the sponsor's total).

Within most school districts in the data base, all entering grade Follow Through children were included in the Fall 1969 testing program. It is expected that 40% to 50% of the children will leave the Follow Through program over a three or four year period, primarily because their parents move away. In addition, however, not all children in the Follow Through program meet the OEO poverty definition for eligibility and some of these children are therefore excluded from the Follow Through versus non-Follow Through comparisons. As a result of such factors, data will be available for much fewer of these children three to four years hence. A roughly equal number of non-Follow Through children are in the test group.

?

Parent interviews were obtained in many projects for which pupil test data were obtained, and a very high proportion of parents of Follow Through and non-Follow Through children in those projects have been interviewed. All Follow Through and non-Follow Through teachers in these districts were sent questionnaires.

Table 1 shows the numbers of projects and persons included in each of the data collection activities during 1969-70. These activities are shown in the approximate sequence in which they occurred, but several, shown for the Spring of 1970 actually overlapped each other.

Table 1

PROJECT AND PERSON DATA BASE FOR DATA COLLECTION ACTIVITIES, 1969-70

Data Collection Activity	Group	Unit	Number by Grade						
			K	E-1	NE-1	2	3	4	Total
Pupil Roster, Fall 1969	All	Projects	65	26	52	42	10	84	89*
	FT + NFT	Pupils	13,807	6,025	7,793	5,110	827	11,612	45,174
Classroom Testing, Fall 1969									
Initial Test Group	FT	Projects	59	24	48	35	7	--	86†
		Pupils	6,619	3,003	3,604	2,430	383	--	16,039
	NFT	Projects	59	24	48	35	7	84	86
		Pupils	3,779	1,708	2,354	1,561	235	9,649	19,286 – in 84 project
Completed Tests (Matched)	FT	Pupils	6,249	2,774	3,286	2,216	239	--	14,764
	NFT	Pupils	3,688	1,628	2,147	1,424	134	(N.A.)	9,021
Parent Survey, Spring 1970	FT	Projects	45	19	31	13	--	--	65
		Interviews completed	4,040	1,692	815	279	--	--	6,826
	NFT	Projects	39	18	14	9	--	60	65
		Interviews completed	2,120	1,122	206	99	--	3,685	7,232
Teacher & Aide Survey, Spring 1970	FT + NFT	Projects	-----------all levels combined---------						89
	FT	Teachers	283	132	161	105	14	--	695
	FT	Aides	258	124	154	91	13	--	640
	NFT	Teachers	113	68	65	53	9	--	308
Classroom Observation, Spring 1970	FT + NFT	Projects	3	4	3	5	--	--	7
		Classrooms	6	8	6	10	--	--	30
	NFT	Classrooms	6	8	4	10	--	--	28
Non-cognitive Measurement Pilot Study, Spring 1970	FT + NFT	Projects	--------- 4 --------			---- 6 ----		0	8
	FT	Classrooms	--------- 10 --------			--- 14 ---		0	24
		Pupils	---------119--------			---317 ---		0	436
	NFT	Classrooms	--------- 9 --------			--- 12 ---		0	21
		Pupils	---------103--------			---291 ---		0	394
Classroom Testing, Spring 1970									
Initial Test Group	FT	Projects	18	9	21	19	4	--	31
		Pupils	2,623	1,119	1,675	1,504	294	--	7,215
	NFT	Projects	18	9	21	19	4	6	30
		Pupils	1,303	753	909	935	181	295	4,376
Completed Tests (Matched)	FT	Pupils	1,552	946	1,190	1,127	239	--	5,054
	NFT	Pupils	894	603	667	671	134	244	3,213
Community Case Studies, Fall-Spring 1969-70	FT + NFT	Projects	--------all levels combined-----------						6
Program Description, Spring 1970	FT	Projects	--------all levels combined-----------						159

---

* The total number of projects shown are the net totals: projects covering more than one grade are counted only once in these totals.

† Excludes two projects in which non-Follow Through comparison classes were not available in 1969-70 and one that did not have a complete achievement battery in 1969-70.

Two sets of figures for both Follow Through and non-Follow Through appear under the heading, "Classroom Testing, Fall 1969." The first pair of rows, the "Initial Test Group," shows the number of pupils by project and grade level who completed at least one of the tests in the classroom battery. A pupil may be shown in this count even though he did not complete all test booklets. The second set, "Completed Tests (Matched)," denote the pupils for whom there is a full set of tests within any single variable (i.e., all booklets in the achievement test battery or all items in either the attitudes toward school scale or the interpersonal feelings scale). The differences between those two sets of numbers are accounted for primarily by an absence during one of the testing days resulting in some whole test booklets not being administered, or, less frequently, the omission of items in the tests that comprised a variable score.

A similar pair of entries appear under the main heading "Classroom Testing, Spring 1970." Here, however, the "Initial Test Group" includes all pupils who completed one or more full tests in the Spring administration whether or not they were represented in the Fall administration. The classification below it, "Completed Tests (Matched)," identifies the subset of pupils represented by full sets of tests in both the Fall and Spring test administration.

Examination of the data tables in the report and the Appendix will never reproduce any of these numbers exactly for all of the tables in the body of the report entail additional cross-tabulations, thus requiring further matching between Spring and Fall test pairings and some additional variable or combination of variables. For example, to classify pupils on Fall and Spring testing according to poverty levels requires all of the following information: (1) a full set of Fall tests, (2) a full set of Spring tests, and (3) information from the parent interview on family income, family size, and occupation of household head.

A third set of entries that requires explanation is the total number of interviews completed in the parent survey. The sum of Follow Through and non-Follow Through totals 14,058; in fact, 14,833 interviews were completed. The totals shown in Table 1 exclude 775 cases that could not be matched with child information by the time the data tapes were frozen.

Field Work Organization

To carry out a data collection effort of the magnitude required, SRI organized an extensive field staff. To maintain quality control in the test data collection, SRI hired experienced supervising testers who were local residents--usually college or university faculty or graduate students but not employees of the school district--and provided them with training in administering the SRI test battery. Some 65 supervisory testers and approximately twice as many aides participated in the administration of the Fall 1968 test battery. By the middle of the 1968-69 school year, it became evident that the Menlo Park SRI staff was too small to oversee effectively this data collection. Accordingly, six persons were appointed as regional representatives to assist in supervising, recruiting, and training the testers.

In anticipation of the increased testing load in the Fall of 1969, the number of regional representatives was increased to 36. The regional representatives typically hold a doctorate and a position as an associate professor at a local university. In addition, the testing team was expanded to include assistant testers as well as supervising testers and aides. A total of 342 supervising testers were employed, and altogether approximately 1,100 different persons were required to administer the 1969 Fall pupil achievement test battery. Nevertheless, in response to problems encountered in the Fall test administration, further changes in the field organization were necessary. In the Spring of 1970, five new persons were added to the Menlo Park staff as field supervisors.

During the first two years of SRI's longitudinal evaluation, approximately 1,500 people worked on developing, printing, shipping, collecting, reading, coding, processing, analyzing, and storing the data.

Processing and Storage of Data

Data assembled in the evaluation have been coded and organized in a computerized data bank. A collection of computer programs are used to handle the data: the editing program checks the input data for validity and identifies the individual to whom the data relate; the up-dating program adds the new cards to the existing bank and at the same time maintains an index of information in the bank; retrieval programs allow users to obtain information from the bank without the necessity of writing special-purpose programs.

The data bank accumulates and reliably matches information about several thousand pupils according to numerous variables. Card image tapes have been made to accumulate all the data available for classrooms within the basic sample:

(1) A tape for all projects including Fall 1969 pupil achievement test data and teacher/aide questionnaire data.

(2) A tape for all projects merging the above with parent interview data for the sub-set of projects in which both twice-per-year testing and interviews occurred.

(3) A tape for projects including Fall and Spring test data, and teacher and parent interview data.

(4) A tape for classrooms including the above and the classroom observation and non-cognitive test data.

The 1968-69 data bank contained over 65,000 card images, the 1969-70 bank over 500,000. The two banks have been merged into a single bank, which will incorporate all further data. It is anticipated that the entire bank will soon include over a million card images.

Analysis and Presentation of Data

The independent, mediating, dependent, or criterion variables were identified in the selection and construction of the instruments. The analytical procedures identify, primarily by means of statistical methods, which variables exhibit significant changes (and which do not), and which other variables appear to be associated with these changes. The units of analysis include the child, the classroom, the individual project, sponsors, and the Follow Through program as a whole.

Statistical Procedures

As a result of the numbers of units, participants, and variables, the amount and variety of data and number of tabulations, computations, and specific analyses to be performed were very large. The statistical procedures employed are limited in number, however. Three main types of analyses and several supplementary ones have been used to identify changes and relationships in the 1968-69 and 1969-70 results:

(1) Cross-tabulations of independent variables on which dependent variable measures are the cell entries.

(2) Multivariate analyses of variance and covariance.

(3) Multivariate analyses of relationships among variables.

Techniques such as factor, cluster, and discriminant function analysis, and correlation and regression analysis, have been employed as necessary in problems of grouping variables or identifying the effects of different combinations of independent variables.

Means had to be found to reduce the large number of variables to manageable proportions. Variables may be consolidated by both logical and statistical means. Arguments for the consolidation or elimination of some derive from theory in education, psychology, sociology and related fields. Preliminary analyses identified variables that appear to have little or no effect on the dependent variables. Composite scores were constructed from subjects' responses to a number of questions. And finally, similar variables were grouped into a single variable; for example, family income, education, and occupation were combined to yield a single socioeconomic index for use in multivariate analyses of covariance.

The statistical methods used to interpret the effects of Follow Through had to take into account the quasi-experimental character of the program. In a quasi-experiment, it is certainly more difficult to reach statistical conclusions in which one has confidence than it is in an experiment with appropriate randomization. The analyses must be performed "as if" certain underlying probabilistic hypotheses were valid. The probability statements that occur from time to time in this report were computed as if randomized allocation of children to Follow Through and non-Follow Through had occurred. Such probability statements should be interpreted as indicators only: they show the nature of the results but qualitatively rather than quantitatively. One alternative to randomization is to assume that the quasi-experiment accepts groups from a population whose parameters were determined according to some underlying hypothesized probability distribution, and then to use Bayesian methods in the analysis; however, the effect of the assumptions regarding the underlying population would be just as subject to uncertainty and criticism as are the results of applying standard statistical hypothesis testing techniques to a quasi-experiment. Furthermore, even if random selection of children, teachers and schools could be achieved, the effects of "forced" cooperation and the fact that the study would be affected by events occurring during the long evaluation period suggest that it is not inevitable that predictions made on the basis of a "rigorous" random sampling design would be much better than those based on the several analytical methods used in this report.

Statistical Presentation

Given the very large number of relationships of interest and importance within the evaluation data, the problem of how to present these relationships in a manner that balances detail and comprehensibility is a formidable one. The feasible options for displaying data are constrained to some extent by SRI's decision to rely heavily on cross-tabulation as a form of presentation that is least likely to be misinterpreted.

Appendix A contains a set of basic tabulations in a form similar to the majority of data tables used in this report:

(1) Two variables (usually both independent variables) define the column and row headings for the cross-tabulation.

(2) Values on a third variable (one of the outcome measures or dependent variables, such as pupil attitude scores) constitute the table entries. Accompanying each entry, such as the mean score of a group defined by the two cross-tabulation variables, is a frequency figure that shows how many cases are represented by the cell entry.

The key experimental variable of participation in Follow Through is always a basic cross-tabulation variable, so that one inevitable contrast or comparison is that between Follow Through and non-Follow Through. The other contrasts are between levels or strata on the other cross-tabulation variable (for example, the poverty level classification) and between dependent variable measures over time, such as the change from pre-test (Fall) to post-test (Spring).

A variety of other presentation forms have been used. Two types of graphs show two contrasts that are fundamental to appraising Follow Through effects and correlates of them. One is a line graph in which Follow Through and non-Follow Through pupil scores on outcome measures are compared at the beginning (Fall) and end (Spring) of the 1969-70 school year. The basic independent variable that adds meaning to these comparisons is the poverty classification of the pupils, so that the interactive influences of program participation and poverty level can be seen. Line graphs are presented for each of three pupil outcome measures--achievement test scores, attitudes toward school and learning, and scores on a measure of interpersonal feelings--for four grade level groupings: kindergarten, entering first grade (E-1), non-entering first grade (NE-1), and second grade. In all these graphs, data have been aggregated over all individual projects and sponsor programs so that the effects displayed are for Follow Through as a whole.

The second type of graph is a bar graph, again contrasting Follow Through and non-Follow Through at two times (Fall and Spring) at each grade level for each of the three outcome measures mentioned above. In the bar graphs, however, the focus is on differences among groups of sponsors--that is, on treatment differences--rather than on differences associated with an antecedent variable such as level of poverty. Thus, in the bar graphs, the effects of different approaches within Follow Through as a whole are highlighted.

Each of the graphs is supported by a series of tables in Appendix A that contain much more information than can be shown conveniently in a graph (e.g., numbers of pupils, standard deviations of score distributions, and t-ratios by which to judge the significance of observed differences).

In this main body of the report, summary tables are shown that have been derived from the more detailed tables in Appendix A. An important caution about tables will be repeated throughout the discussion of the findings. Typically, the appendix tables show all pupils on whom various data were available. Within the body of the report, however, most of the tables show information about only the sub-set of pupils whose poverty classification affirms their eligibility for participation in Follow Through--the "Certain" and "Possible" poverty groups, as described in Appendix 1. In short, most of the tables in the body of the report exclude pupils from families that clearly do not meet the poverty criterion of the Follow Through Program Guidelines.

A presentation combining tabulation and graphic effect has been adopted for reporting results of the evaluation. In these presentations, signs (+ or -) have been substituted for numbers to reduce the "noise" and thereby highlight essential relationships. Again, detailed tables given in appendices support these summary presentations.

The use of the sign (+ or -) tables raises the question of which is the best or most appropriate index of effect. Is the best index the Spring (post-test) measure of the outcome variable or is it the difference between the Fall and Spring measures (post-test minus pre-test)? Since each gives different information and neither seems universally best for all contrasts of interest, both are presented.

Two simple conventions have been used in the sign (+ or -) tables:

(1) Signs appear in sets of three (i.e., +++, +--, -++, and so on). The first or left-hand sign denotes the direction of difference between Follow Through and non-Follow Through at the Fall or pre-test point. The middle sign denotes the Spring or post-test difference, and the third or right-hand sign denotes the difference between Spring and Fall ([post] - [pre]).

(2) Plus (+) signs mean that Follow Through has a higher score value than non-Follow Through and minus (-) signs mean that Follow Through has a lower score value than non-Follow Through. Occasionally, when the number of cases compared was very small the observed difference between Follow Through and non-Follow Through groups was zero. These rare occurrences have been shown as plus (+). Thus, for the first and second signs, the sign denotes the direction of the (FT)-(NFT) difference on either the Fall (pre-test) or Spring (post-test) measures. The third sign denotes a difference between differences; that is, plus (+) means $FT_{(post-pre)} > NFT_{(post-pre)}$ and minus (-) means $FT_{(post-pre)} < NFT_{(post-pre)}$.

Six combinations of signs are empirically possible: +++, -++, --+, ++-, +--, and ---. The combinations of +-+ and -+- are not possible according to the foregoing definitions. For example, +-+ would mean FT > NFT on pre-test, FT < NFT on post-test, but that $FT_{(post-pre)} > NFT_{(post-pre)}$. Neither this nor the reverse, of course, is empirically possible. For those who think graphically, three basic patterns are represented:

The +++ and --- patterns show divergence.
The -++ and +-- patterns show a cross-over
The --+ and +-- patterns show convergence.

The two converging patterns illustrate the dilemma of judging which outcome is of most worth: a higher level or greater gain.

IV SPONSORS AND PROJECTS

Grouping of Sponsors

The differential assessment of particular sponsor models has not yet been undertaken. Such comparisons at this time would be premature and inappropriate, for two important reasons:

(1) Projects differ in their state of implementation, and contrasting a well established approach with one in which some implementation difficulties are still being encountered would not provide a fair test of the relative efficacy of the approaches.

(2) The sponsors differ markedly among themselves in the particular objectives that are salient for them at different grade levels. (This assertion must be taken partly on faith, for the sponsors also differ among themselves in their ability or willingness to express some of their objectives in terms that suggest appropriate modes of measurement.)

The question of which general approaches appear to be achieving most fully their intended purposes remains a question of wide interest; over the long term, this will be an increasingly central issue in the longitudinal assessment but in the present report, sponsor approaches or models have been grouped into five gross categories for some preliminary comparisons. These groupings, admittedly, are judgmental ones based on affinities among sponsors in the philosophical and theoretical underpinnings of their approaches and similarities in their processes and procedures. Over the long term, these classifications will be refined and undoubtedly revised. Some of the data contained in this report--for example, some of the teacher beliefs and practices--suggest bases for more sophisticated groupings according to instructional process variables.

A brief statement of some of the salient characteristics of the sponsor in each group is given below.*

---

* Brief descriptions of sponsor's approaches have been compiled in the following document available from the Follow Through Program Office, Office of Education: "Program Approaches, Follow Through, School Year 1970-71."

Sponsor Group 1

These sponsors emphasize curriculum and teaching methods within the classroom. Most are behaviorists who make extensive use of programmed learning, teaching devices, structured curriculum broken into small units of learning, and systematic reinforcement and reward. This group includes the following models:

(1) Approaches based on IPI and primary education project--
Lauren Resnick and Warren Shepler,
University of Pittsburgh

(2) Behavior analysis approach--
Donald Bushell, Jr.,
University of Kansas

(3) Mathemagenic activities program--
Charles Smock,
University of Georgia

(4) Language development-bilingual education approach--
Juan Lujan,
Southwest Educational Development Laboratory

(5) Responsive Environments Corporation model--
Ruthe Farmer,
Responsive Environments Corporation

(6) Systematic use of behavioral principles program--
Siegfried Engelmann and Wesley Becker,
University of Oregon.

Sponsor Group 2

Group 2 shares a strong commitment to humanistic values with special emphasis on development in non-cognitive areas (e.g., sense of self-worth, respect for others, curiosity and willingness to explore). They advocate the inquiry or discovery model of learning. The approaches included in this group are:

(1) Bank Street College of Education approach--
Elizabeth Gilkeson,
Bank Street College of Education

(2) Education Development Center approach--
Frank Watson,
Education Development Center

(3) Responsive environment approach--
Glen Nimnicht,
Far West Laboratory for Educational Research and Development

Sponsor Group 3

Here are included approaches that are less systematically similar to one another than those in either of the previous groupings. Generally, they share a willingness to be eclectic, drawing from a variety of philosophical and theoretical positions and selecting techniques on pragmatic grounds. Such a characterization does obvious disservice to some of the approaches included in this group, for it implies less internal consistency within the approach than actually obtains. Sponsors included in Group 3 are:

(1) Behavior-oriented prescriptive teaching approach--
Walter Hodges,
State College of Arkansas

(2) California process model--
Ruth Love Holloway,
California State Department of Education

(3) Cognitively oriented curriculum model--
David Weikart,
High/Scope Educational Research Foundation

(4) Cultural linguistic approach--
Nancy Arnez,
Northeastern Illinois State College

(5) Florida parent education model--
Ira Gordon,
University of Florida

(6) Hampton Institute nongraded model--
Mary Christian,
Hampton Institute

(7) Home-school partnership--
Edward Johnson,
Southern University and A & M College

(8) Interdependent learner model--
Lassar Gotkin,
New York University

(9) Tucson early education model--
Joseph Fillerup
University of Arizona

Sponsor Groups 4 and 5

Sponsor Groups 4 and 5 have been kept separate from one another and from the others because of unique characteristics of sponsorship rather than because of similarities among them in the processes that they employ. Group 4 includes all the projects that are self-sponsored--i.e., ones in which local school district staff have played the role of architects and implementers of the Follow Through model. All projects in Group 4 are from the initial group of districts that joined the Follow Through experiment in 1967-68. Included are:

Dade County, Fla.
Detroit, Mich.
Hawaii
Monongalia County, W. Va.
PS-33, New York City, N.Y.
Philadelphia VII, Pa.
Portland, Ore.
San Diego, Calif.

Sponsor Group 5 includes the parent-implemented projects that do not have a secondary affiliation with an instructional model. The most prominent attribute of the parent-implemented projects is their political, more than their educational, orientation. The parent-implemented projects may differ considerably from one another in the approach and style of their instructional program but all share a commitment to high levels of parent participation in policy making and program planning. Projects included in Sponsor Group 5 are:

Roxbury Community School, Dorchester, Mass.
Philadelphia III, Pa.
Pulaski County, Ark.
East Harlem Block Schools, New York City, N.Y.
Highland Park Free School, Boston, Mass.

Program Implementation as Judged by Sponsors

As already implied, a concern throughout the evaluation has been to assure that contrasts between and among program approaches was fair to each approach in the light of its implementation status. Continuously since 1968 information has been gathered through conversations with sponsors, formal inquiries to them, and occasional site visits regarding implementation. The findings presented in this section relate various measures of program performance to the ratings and rankings of projects provided by several of the Follow Through sponsors themselves, on the assumption that project implementation is best assessed by the program sponsor since he best knows the extent to which any of his projects are approaching the ideal of his model. Thus, the criterion of implementation status of a project is the sponsor's judgment.

Each of 12 sponsors was asked to provide two kinds of judgments about his projects. First was a rating on a ten-point scale indicating the developmental state of each of several specified projects against the criterion of the sponsor's opinion of "ideal," weighing all the factors that collectively made up the sponsor's notion of the ideal. The time frame for the judgment was the end of the school year 1969-70.

The second measure requested from the sponsors was an ordinal ranking of each of the same projects, where rank "1" denoted the most fully or best implemented project, and rank "n" denoted the least well implemented one from the sponsor's perspective.

Eight of the twelve sponsors asked provided the sets of judgements described above, most of the others indicating that the task seemed inappropriate within their value orientation. The eight sponsors represented 32 projects, 17 of which were in the 1969-70 study sample (both in the Fall of 1969 and the Spring of 1970). It was possible, therefore, to examine correlates of sponsor ratings and rankings in 17 projects; 12 of these 17 included children who were in their first year and second year of Follow Through and the remaining five projects included children in their first, second, and third year.

Project Ratings and Rankings

The ratings of 17 projects on the scale from 1 ("as far from the ideal as I can imagine") to 10 ("as close to the ideal as I can imagine") ranged from a low of 3 to a high of 8. The modal rating was 7, the median rating was 6.5, and the mean rating was 6.15. The standard deviation of the ratings was 1.27.

Most replies from sponsors included qualifying comments. Typically, these underscored sources of variation within projects such as degree of administrative enthusiasm and support for Follow Through by local staff, and teacher turnover.

There was a slight tendency for projects that included pupils with three years experience in Follow Through to be rated more highly than those that included only two years of experience. This difference, however, was trivial. Three of the five projects with pupils who had three experience years were rated at 7 and two were rated at 6 or below; five of the twelve projects with two years' experience were rated at 7 or higher and the remaining seven were rated at 6 or below.

Examination of the ratings and accompanying comments showed clearly that sponsors applied somewhat different standards of rigor and aspirations in their judgments of the extent to which each project had aproached an "ideal" state. Nevertheless, the correlation between ratings and rankings was .84 for the 17 projects.*

Examination of the ordinal rankings of the status of project implementation showed that 13 of the 17 projects in the 1969-70 study sample were ranked at or above the midpoint in each sponsor's set. The 17 projects that provide the basis for the data reported below, therefore, can be taken to represent the majority of the projects (from this set of 32) that sponsors considered to be reasonably well implemented.

Analyses

Sponsors' ratings of 17 projects on the ten-point scale and their rankings of these same projects correlated reasonably closely (.84). Furthermore, the sponsor rankings of project implementation appeared to be more reliable indices of implementation than the ratings since the rankings required paired comparisons among all projects and thereby eliminated some of the variability in ratings of a project against an unspecified "ideal" that obviously has somewhat different meanings for each sponsor. For these reasons, analyses of correlates of a project's state of implementation used the transformed ranking, rather than the rating, as the index of implementation. Tables 2, 3, and 4 show the characteristics of high-ranked and low-ranked projects on three measures of difference between Follow Through and non-Follow Through. The difference scores are as defined earlier; $FT_{(post-pre)}$ minus $NFT_{(post-pre)}$.

---

* Rankings were transformed to T-scores to take account of the total of 32 projects that were considered when the 17 projects were ranked.

Table 2

SPONSOR RANKINGS OF STATUS OF PROJECT IMPLEMENTATION RELATED TO (FT)-(NFT) DIFFERENCES IN ACHIEVEMENT TEST SCORES

(8 Sponsors with 17 Projects)

		Child's Year in Follow Through			
Ranking	Statistic	Entering Year	Second Year	Third Year	Total
At or above the mid-point of sponsors' projects	Mean difference score*	2.15	0.41	1.42	1.30
	Number of groups	13	13	4	30
	S.D. of difference scores	3.36	2.61	1.52	2.97
Below the mid-point of sponsors' projects	Mean difference score	- 1.59	- 1.97	2.91	- 1.26
	Number of groups	4	4	1	9
	S.D. of difference scores	0.86	2.34	--	2.23
Total, 17 projects	Mean difference score	1.27	- 0.15	1.72	0.71
	Number of groups	17	17	5	39
	S.D. of difference scores	3.36	2.74	1.48	3.01
Difference between high-ranked and low-ranked projects	Mean difference	3.75	2.38	- 1.49	2.56
	S.D. of mean difference	1.03	1.38	--	0.92
	t-ratio	3.65	1.73	--	2.78
	Probability	$< .005$	$\geq .10$	--	$< .01$

---

* Difference = $FT_{(post-pre)} - NFT_{(post-pre)}$.

Table 3

SPONSOR RANKINGS OF STATUS OF PROJECT IMPLEMENTATION RELATED TO (FT)-(NFT) DIFFERENCES IN PUPILS' ATTITUDES TOWARD SCHOOL

(8 Sponsors with 17 Projects)

		Child's Year in Follow Through			
Ranking	Statistic	Entering Year	Second Year	Third Year	Total
At or above the mid-point of sponsors' projects	Mean difference score*	- 0.97	- 0.88	- 3.40	- 1.26
	Number of groups	13	13	4	30
	S.D. of difference scores	2.47	3.74	2.33	3.18
Below the mid-point of sponsors' projects	Mean difference score	0.62	- 0.19	- 0.75	0.11
	Number of groups	4	4	1	9
	S.D. of difference scores	1.39	3.50	--	2.56
Total, 17 projects	Mean difference score	- 0.60	- 0.72	- 2.87	- 0.94
	Number of groups	17	17	5	39
	S.D. of difference scores	2.37	3.69	2.34	3.11
Difference between high-ranked and low-ranked projects	Mean difference	- 1.60	- 0.68	- 2.66	- 1.36
	S.D. of mean difference	0.98	2.03	--	1.03
	t-ratio	- 1.63	- 0.34	--	- 1.32
	Probability	> .10	> .50	--	≈ .20

Note: Lower score on attitude measure denotes more positive attitude toward school and learning; negative difference desirable from Follow Through perspective.

* Difference = $FT_{(post-pre)} - NFT_{(post-pre)}$.

Table 4

SPONSOR RANKINGS OF STATUS OF PROJECT IMPLEMENTATION RELATED TO (FT)-(NFT) DIFFERENCES IN PUPILS' INTERPERSONAL FEELINGS

(8 Sponsors with 17 Projects)

		Child's Year in Follow Through			
Ranking	Statistic	Entering Year	Second Year	Third Year	Total
At or above the mid-point of sponsors' projects	Mean difference score*	0.05	- 0.71	- 1.03	- 0.42
	Number of groups	13	13	4	30
	S.D. of difference scores	2.94	2.93	5.02	3.32
Below the mid-point of sponsors' projects	Mean difference score	1.85	2.32	3.35	2.23
	Number of groups	4	4	1	9
	S.D. of difference scores	3.13	3.80	--	3.32
Total, 17 projects	Mean difference score	0.48	0.003	- 0.15	0.19
	Number of groups	17	17	5	39
	S.D. of difference scores	3.08	3.41	4.82	3.50
Difference between high-ranked and low-ranked projects	Mean difference	- 1.80	- 3.04	- 0.88	- 2.65
	S.D. of mean difference	1.76	2.07	--	1.26
	t-ratio	- 1.02	- 1.47	--	- 2.10
	Probability	> .20	> .10	--	< .05

Note: Lower score on attitude measure denotes more positive interpersonal feelings; negative difference desirable from Follow Through perspective.

* Difference = $FT_{(post-pre)} - NFT_{(post-pre)}$.

In reading Tables 3 and 4, it is important to remember that a low score on both of these two attitude scales represents a more positive attitude. Thus, a negative difference score in these tables reflects a difference favoring Follow Through. In Table 2, however, a more conventional metric was followed and a positive difference favors Follow Through.

Table 2 indicates that projects ranked in the top half of a sponsor's set show statistically significant higher pupil achievement than do projects ranked in the bottom half. Taking all three child experience levels in Follow Through together, this difference was significant at less than the .01 level and was significant at less than the .005 level for the first experience year.

Differences between high-ranked and low-ranked projects on measures of pupil attitude toward school (Table 3) were not statistically reliable but were in the direction favoring Follow Through. The magnitude of the difference overall yielded a significance level of about .20; that is, there is about one chance in five that the difference is random. Relatively, the greatest difference between Follow Through and non-Follow Through occurred in the first experience year where the statistical significance of the difference was between .20 and .10.

The scores on the scale of pupil interpersonal feelings showed a stronger relationship to project rankings than did the measure of attitude toward school. As Table 4 indicates, the overall difference favored Follow Through and was statistically significant at less than the .05 level. In contrast to the attitude trends shown in Table 3, however, the relative differences favored children at higher rather than lower Follow Through experience levels, thus suggesting increasingly good interpersonal relationships (pupil-to-pupil and pupil-to-teacher) as children grow older and experience the program longer.

Data from classroom observations provide additional insight into the status of project implementation and are reported in the next section.

Parent Characteristics as Indicators of Implementation Status

Four measures of parent behavior and opinion were examined for their relationships to the rankings of project implementation provided by the sponsors. All four measures were derived from responses in the parent survey.

The first variable was the parent's agreement or disagreement with the statement that "In this community the parents have a say about how the schools are run." This item was selected as a proxy for a large number of items dealing with the parent's sense of control and influence over schools. Follow Through and non-Follow Through parents were compared on this question, first, for those projects ranked by sponsors as most well implemented and, second, for projects ranked by sponsors as least well implemented. Neither comparison showed a statistically significant difference ($p > .10$ in both cases). In both comparisons, there was a slight tendency for more Follow Through than non-Follow Through parents to agree with the statement but, as the chi square analysis indicated, these differences were very small.

When Follow Through parents only from both the high ranked and low ranked projects were compared, the differences were minor. Follow Through parents from both subgroups of projects showed virtually identical proportions of parents who disagreed with the statement, more parents in the low ranked projects slightly agreed with the statement, and somewhat more parents from the high ranked projects strongly agreed with the statement. When the two overall distributions were compared, however, the amount of the difference was too small to support a conclusion that a reliable difference existed.

On this measure, indicating a sense of parental control over schools, therefore, there were no significant differences between projects ranked higher and those ranked lower by the sponsors.

A second variable was the parent's satisfaction with the sample child's progress in school. Comparisons between Follow Through and non-Follow Through parents within both project groupings and between Follow Through parents in both project groupings did not show any significant differences. Thus, whether the project was ranked by the sponsor among the highest or the lowest of his projects parents expressed generally high satisfaction with their child's progress in school. In all instances, at least three-fourths of the parents indicated that they were "very satisfied" with their child's progress.

A third variable was somewhat more behavioral in character (albeit, a self-report of behavior) and reflected the number and recency of talks with the child's teacher. When Follow Through and non-Follow Through parents were compared among projects ranked low in the implementation scale, there was no significant difference between them but when compared in projects that were ranked high on the implementation scale, the difference by chi square was statistically significant ($p < .02$). Surprisingly, however, the data showed that more non-Follow Through than Follow Through parents had talked privately with their child's teacher, although the data also showed that among Follow Through parents those contacts that had occurred were more recent than among non-Follow Through parents. Within high ranked projects, the same results obtained--there was a statistically significant difference between Follow Through and non-Follow Through parents ($p < .02$) and again, more non-Follow Through than Follow Through parents had talked with their child's teacher.

The final variable on which Follow Through parents were compared was their awareness of the PAC. Substantially more Follow Through parents in projects ranked low in implementation than in those projects ranked high on implementation reported awareness of the PAC. This difference was statistically significant ($p < .005$).

The net result of these parent data analyses in relation to sponsor rankings of project implementation is either (1) that there are no reliable correlates between the parent measures and the sponsor rankings, or (2) that statistically significant relationships run counter to expectation. The fact that parents in projects that have been ranked high in implementation by sponsors are somewhat less likely than parents in low ranked projects to have had recent talks with teachers or to be aware of the PAC seems counter to the idealized expectation of Follow Through stimulating greater parent involvement.

The overall patterns reported above obscure some variation from sponsor to sponsor in parent responses. The small number of different sponsors represented (eight) and the small number of projects available for analysis (17) caution against overinterpreting inter-sponsor differences. Even so, it is unsettling to note that it is in those projects which sponsors consider least well implemented that parent/teacher talks and parent awareness of the PAC seem greatest.

The most important implication for the longitudinal evaluation is the way these findings underscore the need for a better understanding of the parent behavior and belief cues that sponsors look for in assessing their projects and the manner in which they weight these cues.

The present data, extended to variables in addition to those considered above, may suggest elaborated listings of cues and their weights but the simplistic analysis described above is not sufficient to reveal it. Other approaches not yet undertaken, such as a discriminant function analysis, might be appropriate in future assessments. More importantly, however, the ambiguity of the findings calls clearly for more detailed data and analyses. For example, it is conceivable that in "well implemented" programs, parents are more satisfied in ways that cause them to talk to teachers less and be less involved in the PAC. In addition, a better understanding is needed of how sponsors judge the adequacy with which their approach is being implemented with respect to the parents.

V TEACHERS AND CLASSROOMS

The performance of pupils as measured by academic achievement is very much affected by both their teachers and classrooms. The teacher as a source of knowledge, a guide, and an instructor is the key individual affecting the child's academic achievement. Teachers vary in their assumptions and beliefs about the natures of pupils, the learning process, and teaching functions, and in their practices in the classroom. Classrooms are also different in terms of the physical environment and the type and quality of resources and materials available.

Measures of the essential characteristics of teachers, classrooms, and the teaching process are important to the evaluation. Two sources of data are used for this purpose--classroom process observation and a self-report questionnaire for teachers and classroom aides. The classroom process observation is a relatively expensive data collection procedure and cannot be utilized in all locations. In 1969-70 the procedure was being developed and was used in only eight locations. Approximately 1,000 teacher questionnaires were returned to SRI. This section reports the findings of these two data collection sources.

Classroom Process Observations

Two purposes provided the rationale for the development of the structured classroom observation procedures briefly described in Section III. One was to provide a means for assessing the degree to which instructional approaches or models were implemented and, as a corollary to this, to provide a description of the model in process terms. The second purpose was to obtain information about instructional outcomes (primarily child behavior) that are most directly measured through observation.

Involvement by the sponsors and their Joint Fellow representatives was a key feature of this development effort to assure that the observation procedures would produce descriptions that satisfied criteria of program or model implementation. The procedures used to collect observation data during 1969-70 met the judgmental standard of program validity for eight sponsor approaches, two of which fall in Sponsor Group 1, three in Sponsor Group 2, and three in Sponsor Group 3.

Approaches in Sponsor Group 1, as described earlier, are the most highly structured approaches, make systematic use of stimulus-response and reinforcement learning paradigms, rely heavily on behavior analysis, and concentrate on academic and pre-academic skills. Sponsor Group 2 approaches follow a learning model based on inquiry and discovery and seek to impart how-to-learn techniques rather more than substance, particularly in the earliest school years. Sponsors in this group emphasize humanistic values such as strong, positive feelings of self-worth and respect and trust for others. The stimulation of curiosity and the encouragement of discovery is particularly prominent in approaches in this group.

Sponsor Group 3 is more heterogeneous in approaches than the preceding two. As a whole, the approaches classified in Sponsor Group 3 tend to be less systematic and more pragmatic, weaving elements from a variety of educational theory into coherent models. To characterize the approaches in Sponsor Group 3 as "unsystematic" does some disservice to them individually but the models included in this grouping occupy an intermediate position between the more clearly opposing approaches of Groups 1 and 2.

The eight approaches for which the observation procedure was explicitly designed for its first use were those approaches that also are participating in a companion study of planned variation in Head Start. For this reason, the development of the procedure was integrated between the two projects.

Observers were recruited and trained in late March and early April 1970, and conducted observations over the next few weeks in seven projects in 30 Follow Through classrooms and 28 non-Follow Through classrooms.* Of the 30 Follow Through classrooms, six were kindergarten, eight were entering first, six were non-entering first, and ten were second grade. The same numbers held for non-Follow Through except that there were four rather than six non-entering first grade classes. Each of the seven projects was under a different sponsor. Two projects were in Sponsor Group 1, two in Sponsor Group 2, and three in Sponsor Group 3.

---

* Observation data from an eighth location were damaged beyond salvage in transit.

The classroom observations yield several measures of implementation. Broadly these are (1) allocation of time to activities (academic work, play, arts and crafts, etc.), (2) organization of classroom learning groups (large groups, small groups, individual children working independently), (3) amount and kind of communication in the classroom, such as proportion of observed time used in teacher talk or child talk, the nature of requests and kinds of responses called for, and teacher responses following child questions, and (4) the focus of adult communication (e.g., to a single child, to a small group, or to a large group). The findings summarized below are classified according to these categories of measurement.

Before observations were begun, each of the sponsors whose classrooms were to be observed was asked to specify his expectations in each of the four areas described above. A summary of expectations appears in Table 5.

Time Allocation to Activities

The total number of recorded activities on the classroom checklist was distributed among 13 kinds of activities:

(1) Group time, sharing, rest
(2) Story, singing, and dancing
(3) Numbers, mathematics
(4) Alphabet, reading, language development
(5) Finding out about people and how they live (social studies)
(6) Finding out about natural world (science)
(7) Table games, guessing game, working puzzles
(8) Arts, crafts
(9) Cooking, sewing, pounding or sawing
(10) Blocks, trucks
(11) Dolls, dress-up, water play, dramatic play
(12) Big wheeled toys and slides
(13) Active games with rules.

Table 5

SPONSOR EXPECTATIONS OF CLASSROOM OBSERVATION PROCESS VARIABLES

	Group 1		Group 2		Group 3		
	Sponsor J	Sponsor G	Sponsor N	Sponsor C	Sponsor P	Sponsor E	Sponsor I
Grouping of adults and children							
Individual children without adult			X	X		X	
Adult and individual children			X	X			X
Adult and small groups	X	X			X	X	X
Small groups without adult			X	X	X		X
Communication: adult							
Direct request by adults	X	X					X
Adult instructs, informs individual child				X	X		
Adult praise of children or groups	X	X					
Acknowledge adult, children			X		X	X	X
Control by praise	X	X					
Corrective question	X	X					
Corrective feedback	X	X					
Adult initiated interaction	X	X					
Choice request by adult			X	X	X	X	X
Adult interaction with individual child	X	X	X	X		X	X
Adult interaction with small group	X	X			X	X	X
Adult interaction with large group							
Communication: child							
Child talk			X	X	X		X
Child interaction with material			X	X	X		X
Child responses	X	X					
Child initiated interaction			X	X	X	X	

When recorded activities were summarized and analyzed, the following findings emerged:

(1) As the orientation of the approaches that make up the sponsor groups would lead one to anticipate, a greater number of the observed activities in Sponsor Group 1 focused upon academic learning, such as mathematics and reading or language development. Models of Sponsor Group 1 showed the highest recorded average of academic activities ($p < .01$).

(2) The content and process orientations of Sponsor Group 2 and, to a lesser extent, Sponsor Group 3 emphasize inquiry and exploration. Consistent with this, the observations showed a somewhat higher average in both these groups of science and social study activities. Both Sponsor Groups 2 and 3 were significantly higher than Group 1 in science activity ($p < .05$) but only one sponsor in Group 3 was markedly higher than all other sponsors in social studies.

(3) Sponsor Groups 2 and 3 used more table games to help children learn concepts of color, size, shape, similarities, and differences than did Sponsor Group 1 ($p < .05$). This finding is consistent with the intent of approaches in these groups to maintain an environment that stimulates curiosity and encourages exploration.

(4) Sponsor Groups 2 and 3 employed arts and crafts activities to a greater extent than Sponsor Group 1 ($p < .05$). This, too, is in keeping with their more active character in instructional approaches.

Organization of Classroom Learning Groups

Four patterns of grouping consistent with the instructional strategies of the models were derived from the classroom checklist. These were (1) individual child without adult, (2) adult with individual children, (3) adult with small groups of children, and (4) small groups of children without adult.

Table 5 summarized the sponsors expectations. When observations were contrasted to expectations, both for individual sponsors and sponsors grouped into the three main classes, the findings below were obtained:

(1) All eight of the classrooms in Sponsor Group 1 displayed a high frequency of the expected grouping organization of adult with small groups.

(2) Sponsors in Group 2 expected high conformance with three of the four organization groupings in their classrooms. Since nine classrooms were observed, 27 expectations were established as a target. In 16 of these 27 contrasts, a high frequency of the expected groupings was observed. In the remaining 11, a medium frequency was noted.

(3) In aggregate, the three sponsors in Group 3 defined seven grouping expectation patterns in a total of 12 classrooms. In all, this produced a set of 28 target expectations (2 X 4 plus 2 X 4 plus 3 X 4). Over all observations, 18 of the 28 expectations were fulfilled; i.e., a high incidence of expected groupings was observed. In seven of the 28 a medium incidence was recorded, and in three of the 28 a low incidence was recorded.

In summary: the observations showed a high to moderately high correspondence between expected grouping patterns and observed ones. In Sponsor Group 1, all expectations were fulfilled but a smaller number of expectations were defined in advance. In Sponsor Group 2, nearly 60% of the expectations were met as intended and the remainder were nearly satisfied. In Sponsor Group 3, more than 64% of the expectations were fulfilled at the level desired and an additional 25% were met moderately well.

Communication Patterns: Amount, Kind, and Focus

Most of the sponsors' intentions regarding the amount, kind and foci of communication in the classroom were reflected in the process observations.

Both sponsors in Group 2 had a higher proportion of adults talking to one child than of adults talking to small groups of children. This finding held for all classrooms ($p < .05$) and is consistent with the sponsors' desire to have adults give individual attention to children rather than to have communication directed toward a group. In Sponsor Group 3 most of the communication was split about equally between that directed toward an individual child and that addressed to small groups.

Classrooms in Sponsor Group 1 generally showed a high incidence of teacher communication to small groups of children; one of the two sponsors in this group, however, was somewhat more likely than the other to encourage teachers to direct more talk within the small groups to individual children.

It may be noted in passing that when Follow Through and non-Follow Through classrooms were contrasted overall, it was found that a significantly greater proportion of adult talk was addressed to large groups in non-Follow Through classrooms ($p < .05$).

Two types of adult requests were recorded: (1) a direct request to which there is only one known and acceptable response and (2) a choice request which allows the child to decide how he will respond. Significantly greater proportions of direct requests were observed in Sponsor Group 1 than in Groups 2 and 3 ($p < .05$ and $p < .01$, respectively). Conversely, teachers in Sponsor Groups 2 and 3 addressed a higher proportion of choice requests to children than were observed in Sponsor Group 1 ($p < .05$ and $p < .01$).

Feedback patterns varied among the models. Teachers in Sponsor Group 1 gave more positive praise feedback than teachers in the other two sponsor groups ($p < .05$). Sponsor Group 1 teachers also made greater use of corrective feedback (praising desired behavior and ignoring unacceptable behavior) than did teachers in Sponsor Groups 2 and 3 ($p < .05$). Corrective questioning was also more common in Sponsor Group 1, such as correcting a child by saying "Are you certain that six sticks from ten sticks will leave three sticks?"

The classrooms in the three sponsor groups did not differ significantly in the amount of child responses to adults or child initiations of interaction. However, when all "child talk" was considered, one sponsor in Group 2 showed a greater proportion of child talk than the other sponsors ($p < .05$). Under this sponsor's approach, children are encouraged to talk with one another and to inform the teacher of discoveries or request information from her. In keeping with this design, the same sponsor in Group 2 also had a greater proportion than other sponsors of children interacting with materials ($p < .05$).

Taken overall, these data from the classroom observations suggest a high level of implementation, albeit these classes were selected by the sponsor as among his best one year and eight months after Follow Through programs began. Of the classes observed, 14 were rated as being over 90% implemented according to sponsor goals, only four classes were rated below 80% implementation, and one was rated below 50%.

When sponsor groupings are considered, Group 1 classrooms showed an average of 91% implementation. This group is the most prescriptive in its approach, and it is likely to be easier to train teachers when goals and procedures are clearly defined than when they are general. Groups 2 and 3 had classes that averaged 82% and 83%, respectively, in implementation. These models are more global in their view of child education, and it is more difficult to specify the classroom processes that will gain their desired child outcomes.

Characteristics of Follow Through and Non-Follow Through Teachers

The main source of data on the characteristics of Follow Through and non-Follow through teachers was a questionnaire (See Appendix 7). It was distributed through local Follow Through Directors to 1,160 Follow Through and non-Follow Through teachers and 775 aides and assistants. Responses were mailed directly to SRI and were received from 1,003 teachers and 640 aides and assistants, or 86% of the teachers (90% of the Follow Through teachers and 80% of the non-Follow Through teachers) and 86% of the aides and assistants.

A major long term purpose of the teacher survey is to provide an economical, acceptably reliable, and valid description of program processes and certain outcomes. Direct observation of more than a small number of classrooms is not economically feasible. Nevertheless, without descriptions of what occurs, it is not possible to characterize children's classroom experiences in sufficient detail to account for observed variation in their performance. The teacher questionnaire approach complements the classroom observations and provides certain kinds of information that are available only from the teachers themselves. Such data could be obtained by interview but the response rate realized in the Spring of 1970 holds hope for the self-report questionnaire to be as effective and considerably more economical than interviews.

A full analysis of the teacher and aide survey has not yet been completed. The results reported below are preliminary and intentionally selective in their coverage.

General Characteristics of the Teachers

Some general characteristics of Follow Through and non-Follow Through teachers are summarized in Table 6. Several features are notable:

(1) The younger age of Follow Through teachers at each grade level except second grade.

(2) The overall similarities but variations across grades in ethnic background.

(3) The similarities in formal academic preparation.

(4) The differences between Follow Through and non-Follow Through teachers in their certification status.

Table 6

SELECTED CHARACTERISTICS OF FOLLOW THROUGH AND NON-FOLLOW THROUGH TEACHERS

		Follow Through	Non-Follow Through
1. Median age in years, by grade:			
	K	30.0	35.0
	E-1	36.1	41.7
	NE-1	30.9	36.5
	2	36.7	35.5
	3	38.5	46.0

		Follow Through			Non-Follow Through		
		Black	White	All Other & No Ans.	Black	White	All Other & No Ans.
2. Percent in major ethnic groups, by grade							
	K	26.2%	65.4%	8.5%	29.2%	62.0%	8.8%
	E-1	39.4	56.1	4.6	29.4	61.8	8.8
	NE-1	37.9	54.0	8.1	29.2	69.2	1.5
	2	34.3	57.1	8.6	24.5	60.4	15.1
	3	14.3	85.7	0.0	33.3	55.6	11.1
Total		32.4	60.1	7.5	28.6	63.0	8.4

		Follow Through	Non-Follow Through
3. Percent holding bachelors degree or higher		96.1%	96.2%
4. Percent holding highest level of certification granted, by grade			
	K	38.5	38.5
	E-1	47.7	52.9
	NE-1	47.2	60.0
	2	52.4	45.3
	3	50.0	55.6
5. Percent holding tenure status, by grade			
	K	45.9	60.2
	E-1	53.0	55.9
	NE-1	56.9	59.4
	2	57.1	41.5
	3	57.1	55.6

Table 6 (concluded)

SELECTED CHARACTERISTICS OF FOLLOW THROUGH AND NON-FOLLOW THROUGH TEACHERS

		Follow Through	Non-Follow Through
6. Median years of teaching experience, by grade			
	K	4.8%	6.4%
	E-1	9.9	12.1
	NE-1	5.7	6.5
	2	6.2	8.3
	3	5.5	over 20
7. Percent reporting prior formal training in teaching disadvantaged children, by grade			
	K	53.8	48.2
	E-1	60.3	48.3
	NE-1	46.8	39.7
	2	60.2	38.0
	3	71.4	44.4
Total		53.7	43.5
8. Percent reporting such training who found it "very" helpful, by grade			
	K	49.7	47.4
	E-1	72.2	69.0
	NE-1	49.3	36.0
	2	72.6	63.2
	3	30.0	50.0
Total		57.6	52.2

(5) The tendency for more non-Follow Through teachers to enjoy tenure status, particularly at kindergarten.

(6) Differences between Follow Through and non-Follow Through teachers in number of years of teaching experience, consistent with the age differences noted earlier.

Two kinds of findings from the teacher survey are highlighted in this report. One compares and contrasts Follow Through teachers across grade levels and according to sponsor groups on such questions as (1) the kind of training and other support received from Follow Through sponsors, (2) the desire for additional support from sponsors, and (3) the perceived advantages in teaching in Follow Through. The second class of findings are delimited in this report to kindergarten teachers and relate teacher characteristics to pupil performance on school achievement measures. These data are described in Section VIII.

Differences Among Teacher Responses According to Sponsor Group and Grade

Table 7 summarizes the reports of Follow Through teachers regarding the kinds of training and other support they have received from sponsors. In the top half of the table, these data are summarized according to sponsor group and in the bottom half they are summarized by grade level. The table shows that the three major sponsor groups (1, 2, and 3) are similar to one another in the pattern of training and support services they provide. This does not imply that the substance of the training, equipment, and materials is identical but simply that the general level of support is comparable.

Sponsor Group 2 was somewhat less likely than Sponsor Groups 1 and 3 to provide training prior to school but was more likely than the other two sponsor groups to provide training during school. Sponsor Groups 1 and 2 provide somewhat more equipment than Sponsor Group 3. Sponsor Group 1, in keeping with the more structured character of its instructional program, was more likely than Sponsor Groups 2 and 3 to supply materials. All three groups also provided a high level of support in terms of individual consultations to teachers and visits from the sponsor training staff.

Sponsor Groups 4 and 5 stand in contrast to the other three. Both may call upon more local support or self-sufficiency, which is consistent with the character of the two groups (Sponsor Group 4 are self-sponsored projects and Sponsor Group 5 are parent-implemented projects).

Table 7

SPONSOR TRAINING AND SUPPORT REPORTED BY FOLLOW THROUGH TEACHERS

		Type of Training and Support							
	Base Number	No Response	Before School Year Began	During School Year	Equipment	Teachers Materials	Individual Consultation	Visits from Sponsor Training Staff	Other
Sponsor Group									
1	211	6.2%	75.4%	79.6%	72.5%	84.4%	74.9%	87.2%	11.4%
2	154	3.9	64.9	88.3	73.4	76.6	79.9	90.3	8.4
3	227	5.7	72.2	79.3	65.2	72.2	70.5	88.5	11.0
4	83	50.6	32.5	44.6	49.4	49.4	34.9	39.8	3.6
5	20	50.0	25.0	25.0	50.0	45.0	20.0	25.0	10.0
Total	695	21.1%	65.5%	75.7%	66.9%	73.5%	68.2%	80.9%	9.6%
Grades									
K	283	11.3%	61.1%	76.3%	64.3%	68.2%	68.6%	81.3%	11.7%
E-1	132	9.8	75.8	72.7	72.7	82.6	75.8	84.8	5.3
NE-1	161	9.9	60.9	79.5	67.1	74.5	64.0	80.1	9.3
2	105	18.1	71.4	75.2	68.6	77.1	66.7	78.1	10.5
3	14	28.6	64.3	50.0	50.0	57.1	50.0	64.3	7.1
Total	695	12.1%	65.5%	75.7%	66.9%	73.5%	68.2%	80.9%	9.6%

The portion of Table 7 that displays sponsor support according to grade level shows less variation than the support according to group. Most of the variation across grade levels is accounted for by the grade level distributions within the different sponsor groupings.

Table 8 is limited to the sponsor groupings and shows the percentage of teachers in each group who had suggestions to make regarding additional support that the sponsors should provide. The differences between groups in this table provide a rough index of the extent to which the teachers appear satisfied with the kinds of support summarized in the previous table. In keeping with the more self-sufficient character of the programs in Sponsor Groups 4 and 5, these are the two in which the highest proportion of teachers had no suggestions for additional support. Among the three larger groupings, Sponsor Group 1, closely followed by Sponsor Group 3, reflected fewer requests for additional sponsor support. The differences among sponsor groupings is statistically significant, as shown in the table footnote ($p < .001$).

Table 9 is similar in layout to Table 7 presented earlier; it shows the percentage of teachers, by sponsor group and then by grade level, who did or did not perceive advantage to teaching in a Follow Through program. Some differences among sponsor groups are detectable. For example, Sponsor Group 1 shows greater variability in response than do the other sponsor groups. A higher percentage of teachers in Sponsor Group 1 reported much (not just some) advantage to teaching in Follow Through but, at the same time, higher percentages either did not see any advantage to teaching in Follow Through or were unwilling to commit themselves ("don't know"). The overall differences between sponsor groups approached statistical significance ($.10 > p > .05$ by chi square).

In the classification of teachers according to grade, some small differences are again notable. For example, kindergarten teachers are more likely than teachers at higher grades to perceive much advantage in teaching in Follow Through. The overall differences in this tabulation also approached statistical significance ($.10 > p > .05$).

Table 8

PERCENT OF FOLLOW THROUGH TEACHERS IN EACH SPONSOR GROUP SUGGESTING VARIOUS KINDS OF ADDITIONAL NEEDED SUPPORT FROM SPONSORS

Follow Through Teachers in Sponsor Group	Percent Suggesting Additional Support		Total	
	None	Some	Percent	Number
1	43.1%	56.9%	100%	211
2	29.2	70.8	100	154
3	39.2	60.8	100	227
4 and 5	64.1	35.9	100	103
All Follow Through Teachers	41.9%	58.1%	100%	695

Chi square = 31.79, $p < .001$. Contingency coefficient = .209

Table 9

PERCENT OF FOLLOW THROUGH TEACHERS REPORTING AN ADVANTAGE TO TEACHING IN A FOLLOW THROUGH PROGRAM

	No Response	Much Advantage	Some Advantage	No Advantage	Don't Know	Total	
						Percent	Number
Sponsor Group							
1	1.4%	65.4%	18.0%	8.1%	7.1%	100%	211
2	1.9	58.4	31.2	3.9	4.5	100	154
3	0.4	62.1	29.1	3.5	4.8	100	227
4	0.0	62.6	27.7	3.6	6.0	100	83
5	5.0	60.0	20.0	5.0	10.0	100	20
Total	1.2%	62.3%	25.8%	5.0%	5.8%	100%	695
Grades							
K	1.1%	67.8%	20.5%	5.0%	5.6%	100%	283
E-1	2.3	63.6	27.3	3.0	3.8	100	132
NE-1	0.6	56.5	29.2	5.0	8.7	100	161
2	1.0	54.3	32.4	7.6	4.8	100	105
3	0.0	64.3	28.6	7.1	0.0	100	14
Total	1.2%	62.3%	25.8%	5.0%	5.8%	100%	695

VI FAMILIES AND HOMES

Data regarding families and homes are important to the evaluation for a number of reasons. One is that such data are needed to identify subsets of children in Follow Through and in the non-Follow Through comparison groups that are similar in socioeconomic and certain other family characteristics that might be related to the educational progress of the child. Another important reason is that the Follow Through Guidelines require parent participation in the local Follow Through program in the belief that the school and the community should be opened up to each other for the benefit of the home as well as of the child and school.

This section contains a summary of comparisons between Follow Through and non-Follow Through groups for selected descriptive, mediating, and outcome variables. All of the comparisons presented in this section are between Follow Through and non-Follow Through groups that SRI classified as Certain poverty or Possible poverty according to the OEO poverty index. All the children included also must have completed the full set of achievement tests given in both Fall 1969 and Spring 1970, and their parents must have been interviewed as a part of the parent survey. Data are not presented for third graders, because their parents were not interviewed. Children that meet all these criteria total somewhat more than 2,000 depending on the specific variable of interest.

Detailed definitions and the sources of the variables used in this section are given in Appendix 8. The variables are organized into three broad classes:

(1) Demographic characteristics

(2) Family life style

(3) Parent awareness of and participation in Follow Through and other school activities.

Demographic Characteristics

Twelve variables fall in this class:

(1) Sex of child
(2) Age of child
(3) Preschool experience of child
(4) Ethnicity
(5) Sex of household head
(6) Occupation of household head
(7) Employment status of household head
(8) Education of household head
(9) Education of spouse
(10) Family income
(11) Family size
(12) Home ownership

As summarized in Table 10, on only five of these 12 variables do there appear to be differences worth noting between Follow Through and non-Follow Through groups--age of child, preschool experience of child, ethnicity, education of household head, and education of spouse.

Follow Through and non-Follow Through children tend to differ somewhat on both age and preschool experience. Generally, non-Follow Through children are slightly older. The difference between median ages is small (seldom more than a few months) but the age distributions differ enough to warrant the generalization.

Follow Through and non-Follow Through children are very different according to preschool experience. At all grade levels, and most strikingly at kindergarten and entering first, the proportion of Follow Through children with prior Head Start experience greatly exceeds that for non-Follow Through and the proportion of non-Follow Through children without preschool experience greatly exceeds that for Follow Through. Typically, these differences are significant at or below the .001 level.

Table 10

SUMMARY OF COMPARISONS OF FOLLOW THROUGH AND NON-FOLLOW THROUGH FAMILIES ON DEMOGRAPHIC CHARACTERISTICS*

Variables on Which FT and NFT Were Essentially Similar[†]

- Sex of child
- Sex of household head
- Occupation of household head
- Employment status of household head
- Family income
- Family size
- Home ownership

Variables on Which FT and NFT Differed[†]	Nature of Difference
Age of child	Median age of FT and NFT children essentially equal; NFT children showed slightly greater age range.
Preschool experience of child	Averages over all grade levels: FT - 40% Head Start, 20% Head Start equivalent or both Head Start and equivalent, 40% no preschool. NFT - 17% Head Start, 12% Head Start equivalent or both Head Start and equivalent, 71% no preschool.
Ethnicity	FT and NFT approximately equal in proportion black. FT exceeded NFT in proportion non-black minority. NFT exceeded FT in proportion white.
Education of household head	FT slightly greater than NFT in median years of school completed.
Education of spouse	FT slightly greater than NFT in median years of school completed.

---

* See Appendix 8 for detailed definition of variables.

[†] "Similar" defined as $p > .10$ for chi square of FT vs NFT by variable. "Differed" defined as $p \leq .10$ for chi square of FT vs NFT by variable.

The proportion of black pupils in Follow Through and non-Follow Through is reasonably similar across all grade levels and between sponsor groups combined across grade levels. There are some variations, to be sure, within sponsor groups and in certain projects. The ethnic categories on which Follow Through and non-Follow Through tend to differ, leading to an overall difference in the ethnic distribution, is in the proportion of white pupils and non-black minority pupils. Generally speaking, non-Follow Through has a higher proportion of white pupils and a lower proportion of non-black minority pupils. The probability of this difference overall is about .05.

The educational attainment of both the household head and spouse tends to favor Follow Through children at entering first, non-entering first, and second grades. In at least one-third of all the comparisons examined (four grade levels and three or four sponsor groups), the differences were significant at the .05 level or less. The magnitude of the difference is modest--usually less than a year or two of school. Where differences were observed, the median level of educational attainment for Follow Through parents is usually in the "some high school" category, whereas the median for non-Follow Through is closer to eight years' school. The association between the educational attainment of the household head and that of the spouse seems very high, as would be expected.

Family Life Style

Nine variables were selected as descriptive of family life style:

(1) Imitative behavior

(2) Parent/child mutual help

(3) Child helps father

(4) Home reinforces school/child relationships

(5) Experiences beyond the home and neighborhood

(6) Fate control (parent feelings about work vs luck)

(7) Fate control (parent acceptance of fate)

(8) Fate control (parent confidence in plans)

(9) Expectations of job success for household head.

As summarized in Table 11, there were very few instances of any difference, and even fewer of significant differences, between Follow Through and non-Follow Through on these variables according to grade level and sponsor group. On two of them--parent/child mutual help, and experiences beyond the home and neighborhood--overall differences tended to favor non-Follow Through families at a significance level of about .10. There were instances of sharper differences within some sponsor groups at some grade levels, but the general impression of overall similarity between Follow Through and non-Follow Through emerges.

Parent Awareness of and Participation in School Activities

This set of variables represents outcomes sought by Follow Through generally and by most sponsors. The set is composed of 14 variables:

(1) Awareness of classroom activities

(2) Parent/school contacts beyond the classroom

(3) Parent works in classroom or school

(4) Visits to classroom by family members

(5) Recency of talks between parent and teacher

(6) Parent aspirations for child during school

(7) Parent aspirations for child following school

(8) Parent general satisfaction with child's school

(9) Parent sense of influence or control over school

(10) Parent feelings that his ideas matter to those who run the schools

(11) Parent confidence and optimism in school matters

(12) Parent sense of helplessness in school matters

(13) Parent involvement in social and political groups

(14) Follow Through parents' awareness of the Policy Advisory Committee.

On 10 of these 14 variables--the exceptions are 6, 7, 11, and 12 in the above list--some differences between Follow Through and non-Follow Through parental behavior is evident and appear to be statistically reliable. These are shown in Table 12.

Table 11

SUMMARY OF COMPARISONS OF FOLLOW THROUGH AND NON-FOLLOW THROUGH FAMILIES ON FAMILY LIFE STYLE*

Variables on Which FT and NFT Were Essentially Similar†

Imitative behavior

Child helps father

Home reinforces school/child relationships

Fate control (work over luck)

Fate control (acceptance of fate)

Fate control (confidence in plans)

Expectations of job success for household head

Variables on Which FT and NFT Differed†	Nature of Difference
Parent/child mutual help	At grade levels E-1 and 2, NFT families tended to score higher than FT families; differences at K and NE-1 not significant.
Experiences beyond the home and neighborhood	At grade levels K, E-1, and NE-1, NFT families scored higher on this variable than FT; differences at grade 2 not significant.

---

* See Appendix 8 for detailed definition of variables.

† "Similar" defined as $p > .10$ for chi square of FT vs NFT by variable.
"Differed" defined as $p \leq .10$ for chi square of FT vs NFT by variable.

Table 12

SUMMARY OF COMPARISONS OF FOLLOW THROUGH AND NON-FOLLOW THROUGH FAMILIES ON PARENT AWARENESS OF AND PARTICIPATION IN SCHOOL ACTIVITIES*

Variables on Which FT and NFT Were Essentially Similar†

Parent aspirations for child during school
Parent aspirations for child following school
Parent confidence and optimism in school matters
Parent sense of helplessness in school matters

Variables on Which FT and NFT Differed†	Nature of Difference
Awareness of classroom activities	FT parents exceeded NFT parents at all grade levels; differences marginally significant at K, clearly significant at E-1 and NE-1, not significant at 2.
Parent/school contacts beyond the classroom	FT parents exceeded NFT parents; differences clearly significant at all grade levels except 2.
Parent works in classroom or school	FT parents more likely than NFT parents to work for pay or as volunteer in school or classroom; difference $p = .05$ or less at all grade levels except 2 where $p = .11$.
Visits to classroom by family members	FT families more likely to visit classroom than NFT families; differences clearly significant at E-1 and NE-1, marginally significant at K, not significant at 2.
Recency of parent/teacher talks	FT parents more likely than NFT parents to have had talks with teacher within the past month; differences significant at K, E-1, and NE-1, but not at 2.
Parent general satisfaction with child's school	Overall relationship weak but favors FT; significant at K, not significant at higher grades.
Parent sense of influence and control over school	FT parents exceed NFT parents significantly in sense of influence at K and E-1; differences at NE-1 and 2 not significant.
Parent feelings that his ideas matter to those who run the schools	FT parents exceed NFT parents at K and E-1 in feeling that their ideas matter; differences not significant but favor FT at NE-1 and 2.
Parent involvement in social and political groups	FT parents have higher sense of efficacy than NFT parents; differences significant at K and NE-1, marginally significant at E-1, not significant at 2.
FT parents' awareness of the PAC	FT parents in Sponsor Group 2 significantly more aware of PAC than FT parents in other sponsor groups.

---

* See Appendix 8 for detailed definition of variables.

† "Similar" defined as $p > .10$ for chi square of FT vs NFT by variable.
"Differed" defined as $p \leq .10$ for chi square of FT vs NFT by variable.

Follow Through parents are more aware of classroom activities than are non-Follow Through parents. The differences are greatest at entering and non-entering first grades ($p < .01$), approach a significant difference at kindergarten ($p \sim .15$), and do not appear significant at second grade.

Follow Through parents are much more likely than non-Follow Through parents to have contacts with school personnel other than the teacher (the principal, school nurse, or social worker). These differences are significant at the .02 level at kindergarten, at .001 level in both the first grade groups, and at about .15 at second grade.

Follow Through parents are more likely than non-Follow Through parents to work in the classroom either for pay or as volunteers. Overall, the reliability of this difference is about .02.

Follow Through parents are more likely than non-Follow Through parents to have visited the classroom one or more times. The differences are greatest in first grade (both entering and non-entering), clearly significant at second grade, and perhaps not significant at kindergarten.

Parents of Follow Through children at kindergarten, entering first, and non-entering first levels are more likely to have had talks with teachers and to have had these conversations more recently than are non-Follow Through parents. Overall, the differences at second grade are not significant.

Parent general satisfaction with the child's school does not show sharp differences between Follow Through and non-Follow Through, although somewhat more Follow Through than non-Follow Through parents at all levels are likely to express high satisfaction. At the kindergarten level, the difference is significant at the .01 level. The differences are not statistically significant in the higher-grade groups, however.

Follow Through parents of both kindergartners and entering first grade children report a somewhat greater sense of influence and control over the school than do non-Follow Through parents. The clearest difference between Follow Through and non-Follow Through occurs at the kindergarten level ($p < .02$); there is a marginal difference ($p < .10$) at entering first. At the higher grade levels, the differences are not significant.

Follow Through parents of children at kindergarten and entering first grade are more likely than non-Follow Through parents to report that their ideas matter to those running the schools. At non-entering first, the difference is not significant, and the differences at second grade are suggestive but not great ($p < .20$).

Follow Through parents are somewhat more likely than non-Follow Through parents to participate in adult groups (such as social organizations, PTA, parents' clubs). The differences are statistically significant at both kindergarten and non-entering first ($p < .02$ and $p < .01$, respectively) but are simply suggestive at entering first and second grade levels.

There are obvious differences between Follow Through and non-Follow Through parents in their awareness of the PAC, as would be expected. There are also some differences within the Follow Through parent group according to the sponsor group. Follow Through parents in Sponsor Group 2 are more likely than parents in the other sponsor groups to indicate knowledge of PAC.

VII THE CHILDREN

As stated earlier, improving the life chances of poor children is the ultimate aim of Follow Through. Identifying the educational practices that will maximize the chances for poor children to enjoy self-confident, productive, constructive lives is a difficult task. Indeed, even finding agreement among authorities and men of good will on a common set of things that children ought to know and believe when they are five, six, seven, or eight years old so that they will be likely to enjoy fruitful lives is in itself no mean assignment. Most agree that children must develop effective habits of learning, acquire a positive desire to learn, and master skills by which the culture is transmitted and extended. Such accomplishments may not be sufficient conditions for assuring self-confident, productive, and constructive lives but few would deny their necessity.

The three primary measures presented in this section are pupil academic achievement, attitudes toward school, and interpersonal feelings. The measures of achievement were obtained from a test battery (described in Appendix 4) that provides indicators of verbal/linguistic skills, quantitative/computational skills, and perceptual/motor skills. Each of these major categories may be broken down into more explicit factors. To keep the amount of data to be reported within reasonable bounds, however, achievement test scores were consolidated into a single score and data presented in this section are based on this total.

The measure of attitudes toward school reflects children's responses to questions about their feelings toward school and learning new things. The interpersonal feelings score represents their feelings toward teachers and classmates.

Additional measures concerned with non-cognitive growth (e.g., task persistence, curiosity, and internalized acceptance of responsibility for success and failure) are also reported for a judgmental subsample of children.

Data presented in this section display differences and similarities between Follow Through and non-Follow Through children according to the following variables:

(1) Level of poverty

(2) Preschool experience

(3) Extent of Follow Through services received

(4) Grade level

(5) Follow Through model or approach experienced.

As noted at the bottom of the tables in this section that summarize the results on these variables, Appendix A presents the tabulated data in more detail.

In the final section of this report (Section VIII), interrelationships among achievement, attitude, and non-cognitive measures and other mediating variables, such as teacher characteristics and family life style, are presented.

Pupil Outcome Measures: Achievement, Attitudes Toward School, and Interpersonal Feelings

Discussed below are pupil performance and beliefs on three outcome measures: (1) the achievement test battery in its various grade level versions, (2) an "attitudes toward school" scale, and (3) an "interpersonal feelings" scale.*

The achievement battery was described briefly in Section III and in more detail in Appendix 4.

The two attitude measures were based on pupils' responses to seven questions that were part of the tests administered to all children in the study sample in the Fall of 1969 and Spring of 1970. The attitudes toward school scale included three questions asking the pupil to indicate how he felt (a) about learning out of books, (b) what he thinks about coming to school in the morning, and (c) how he feels about learning new things. The pupils expressed their feeling on each of these questions by marking one of three faces in the test booklet--a smiling face (feeling happy or good), a straight face (feeling neither particularly bad nor good), and a frowning face (feeling unhappy or not good).

The interpersonal feelings scale included two sets of paired items or four in all. One pair asked how the child felt about other boys and girls in his school, and its reciprocal asked how he thought other boys and girls in his school felt about him. The other pair of questions asked how the child felt about his teacher, and the companion question asked how he thought the teacher felt about him. Again, the pupils showed their response by marking a smiling face, a straight face, or a frowning face.

The findings on these outcome measures of school achievement, attitudes toward school, and interpersonal feelings are organized to address two classes of objectives central to Follow Through as a national program and the planned variation experiment within Follow Through. The first set includes the social policy issues that give meaning to Follow Through. By legislative and program intent, Follow Through is for poor children with preference to those who experienced Head Start (or its locally defined equivalent) prior to enrollment in regular school. Once enrolled in Follow Through, a child may receive the full array of services that the Follow Through Guidelines prescribe or he may receive only some of them. (For example, Follow Through Guidelines permit some pupils to be drawn from families that do not fall within the OEO definition of proverty. However, only children from low income families, as defined by the OEO proverty index, are eligible to receive the full range of services.) Thus, level of poverty, type of preschool experiences, and range of services received constitute three central policy variables in the evaluation of Follow Through.

---

* A subsequent section of the report will present additional data comparing Follow Through and non-Follow Through children on a substantially larger number of noncognitive measures. These additional measures of noncognitive variables, however, were limited to a judgmental sample of about 850 children in eight projects.

The second set of questions concerns the differential effects of the Follow Through models or approaches. When comparing approaches, the primary classification of the data are into groupings of sponsors according to gross theoretical and procedural similarities, as already described in Section IV.

Finally, the data are also organized according to grade level so that the direction and magnitude of the effects may be examined in light of the length of time that a child has participated in Follow Through. Data from the entering year in Follow Through--either kindergarten or entering first grade--are by far the most important data available at this time. Children at these grade levels in 1969-70 constitute the first generation of pupils who experienced a reasonably well implemented and refined approach. This is not meant to discount fully the data for children at higher grade levels (non-entering first, second, and third) but is intended to emphasize the importance of the entering grade levels relative to the later ones.

Standardization of Scores on Pupil Measures

Pupil performance on the achievement battery varied widely from one geographical place to another. Appendix Tables A-1 through A-4 show this phenomenon. These tables display the mean scores by grade level for both Follow Through and non-Follow Through pupils in 86 projects in which achievement tests were administered in Fall 1969. The tables show two things that have an important influence on the way in which data have been treated in the analyses that follow: (1) the range of difference from place to place and (2) the similarities and dissimilarities between Follow Through and non-Follow Through groups within projects.

Table 13 shows the raw score means for each grade level over all projects. The first row within each grade level shows the mean over all pupils and the standard deviation of that score distribution. The second row shows the project means and the standard deviation of this distribution of project means. The scores in Table 13 and in the Appendix A Tables A-1 through A-4 are mean percent correct of all items administered. (See Appendix 4 for a summary of the number of items in each grade level battery according to a gross classification of content.)

At the kindergarten level, individual project means within Follow Through ranged from a low of 28.89% correct to a high of 65.72% correct. Within the non-Follow Through group, the range was from a low of 32.38% correct to a high of 65.88% correct. The Follow Through and non-Follow Through distributions are similar but far from identical; the correlation between the Follow Through and non-Follow Through distributions by project is .566.

The score range by project at entering first grade for Follow Through was from a low of 54.11% correct to a high of 74.04% correct. An even greater range obtained within the non-Follow Through group where the lowest mean was 51.51% correct and the highest was 83.65% correct. The correlation between the Follow Through and non-Follow Through distributions was .381.

At the non-entering first grade level, the range of project means was from 30.66% correct to 62.38% correct for Follow Through. The non-Follow Through scores were similar, ranging from 33.88% correct to 66.29% correct. The two distributions correlated .401.

At the second grade level, the project means ranged from 38.56% correct to 68.95% correct for Follow Through and, for non-Follow Through, from 40.26% correct to 79.85% correct. The correlation between these distributions was .545.

Table 13

MEAN PERCENT CORRECT ON ACHIEVEMENT BATTERY FOR PUPILS AND PROJECTS AT VARIOUS GRADE LEVELS
(Fall 1969)

		Follow Through			Non-Follow Through		
Grade Level	Unit	Number	Mean	Standard Deviation	Number	Mean	Standard Deviation
Kindergarten	Pupil	6,249	45.27	16.65	3,688	44.93	16.84
	Project	59	44.86	7.68	59	45.90	8.08
Entering First	Pupil	2,774	65.71	15.50	1,628	68.83	14.69
	Project	23	65.18	6.23	23	69.08	6.45
Non-Entering First	Pupil	3,286	45.46	12.64	2,147	48.12	12.31
	Project	48	45.97	7.42	48	48.69	7.00
Second	Pupil	2,216	54.99	15.66	1,424	59.35	16.47
	Project	35	54.03	8.51	35	60.77	9.66
Third	Pupil	239	38.60	13.71	134	39.19	11.15
	Project	4	36.62	6.44	4	38.45	4.78

As these data suggest and the appendix tables affirm, simple aggregation of test scores from one project to another to provide indications of differences between Follow Through and non-Follow Through according to sponsor groupings or some other classification could be seriously misleading. In well over half of the projects, the differences between Follow Through and non-Follow Through groups on the raw score means was statistically significant. Thus, even though the correlations coefficients suggest a moderate similarity between the Follow Through and non-Follow Through samples in initial achievement test performance, it is clear that place-to-place comparisons that assumed similarity would be unwarranted.

In addition to dissimilarities between Follow Through and non-Follow Through groups within projects, the range of differences among projects within a sponsor group classification was also large, thus cautioning against simple summation as a means for showing sponsor group averages.

The approach adopted in the analyses reported here was to standardize the score distributions for each district individually at each grade level. Briefly, the procedure pooled all Follow Through and non-Follow Through pupil scores for both Fall and Spring combined into a single distribution whose mean was set equal to 50 with a standard deviation of 10. Each score was then expressed as a standard score with reference to these values. The distribution was then disaggregated and reassembled into Fall and Spring distributions for both Follow Through and non-Follow Through.

All the pupil achievement data presented in this report, with the exception of Table 13 and Appendix Tables A-1 through A-4 referred to above, are shown in standard score form. Other pupil measures, such as the scores on the scale of attitudes toward school and learning and the interpersonal feelings scale, were also standardized by an identical procedure. The effect of the standardization has been to eliminate very largely the inter-district or inter-project variability from the contrasts of Follow Through and non-Follow Through pupils. It is not possible, therefore, to draw comparisons from one project to another based on the standardized scores. It is possible, however, to look from project to project or from one group of projects to another at the differences between Follow Through and non-Follow Through. These differences, expressed in standard score terms and summed across projects classified in various ways, constitute the primary comparisons in the remainder of the report.

The Outcome Measures Applied to Children from Lower Income Families

As already noted, only children from low income families as defined by the OEO poverty line index are eligible to receive the full range of services provided by each Follow Through project. Data obtained from parents in face-to-face interviews during Spring 1970 were used to group children according to level of poverty. As explained in Appendix 1, three groupings were derived: (1) children from families that certainly fall below the OEO poverty line, (2) those from families that certainly do not meet the OEO definition, and (3) the remainder--referred to throughout the balance of the report as "Possible poverty"--for whom the data gathered in the parent interviews were too gross to allow classification as "Certain poverty" or "Not poverty."

Of the families interviewed, about 35% of those with a Follow Through child and about 41% of those with a non-Follow Through child were categorized as "Not poverty." In a strict sense, the data of greatest interest relate to the other children--the 65% of the Follow Through group and the 59% of the non-Follow Through group--and it is these children, in kindergarten through grade two, to whom Tables 14, 15, and 16 apply (the data shown for grade three covers all poverty groups since parents of grade three children were excluded from the interview survey and therefore data on poverty are not available for these children).

Table 14 displays achievement test results, Table 15 displays attitudes toward school, and Table 16 displays interpersonal feelings for Follow Through and non-Follow Through children.

The kindergarten data in Table 14 show clear differences favoring Follow Through. Follow Through kindergartners began the 1969-70 school year at a measured achievement level slightly greater than their non-Follow Through counterparts. This difference of 1.03 standard score units approached statistical significance; that is, there are about 7 chances in 100 that the observed difference is accidental. By the end of the 1969-70 school year, the difference between the Follow Through and non-Follow Through kindergartners had widened to a point where it can be said with high confidence that the margin is a reliable one ($p < .001$). The fact of greater gain during the 1969-70 school year by Follow Through in contrast to non-Follow Through kindergartners was also statistically reliable ($p \simeq .05$). If one were to graph the Fall and Spring scores for Follow Through and non-Follow Through kindergartners, a diverging pair of lines would be shown. Follow Through kindergartners began the year slightly ahead and completed the year still further ahead.

Table 14

ACHIEVEMENT TEST SCORES FOR FOLLOW THROUGH AND NON-FOLLOW THROUGH PUPILS CLASSIFIED AS "CERTAIN POVERTY" AND "POSSIBLE POVERTY," 1969-1970

(Standardized Scores)

				(FT)-(NFT)		
Grade Level	Statistic	Follow Through	Non-Follow Through	Mean Diff.	t-Ratio	p
Kindergarten	No. Pupils	741	360			
	Fall Mean	43.49	42.46	1.03	1.83	<.07
	Spring Mean	55.05	53.27	1.78	3.42	<.001
	(Spr)-(Fall)	11.56	10.81	0.75	1.96	≃.05
Entering First	No. Pupils	436	273			
	Fall Mean	42.31	44.81	-2.50	-3.11	<.002
	Spring Mean	52.32	53.19	-0.87	-1.42	>.10
	(Spr)-(Fall)	10.00	8.38	1.63	3.23	<.002
Non-Entering First	No. Pupils	290	57			
	Fall Mean	44.38	46.36	-1.97	-1.81	<.10
	Spring Mean	54.94	56.66	-1.72	-1.33	>.10
	(Spr)-(Fall)	10.55	10.30	0.25	0.33	>.50
Second	No. Pupils	89	21			
	Fall Mean	43.87	51.29	-7.42	-3.36	<.002
	Spring Mean	51.20	56.78	-5.58	-2.44	<.02
	(Spr)-(Fall)	7.33	5.49	1.83	1.49	>.10
Third*	No. Pupils	239	134			
	Fall Mean	46.07	45.97	0.11	0.12	>.80
	Spring Mean	53.67	54.49	-0.82	-0.78	>.20
	(Spr)-(Fall)	7.60	8.53	-0.93	-1.68	<.10

Note: See Appendix A for detailed summaries by poverty category and sponsor group. Achievement test data appear in Tables A-5 through A-10 (kindergarten), A-23 through A-27 (entering first grade), A-38 through A-43 (non-entering first grade), and A-56 through A-60 (second grade).

* Third grade data include all pupils; poverty classification not possible at this grade since interviews not conducted to obtain family income and family size information.

For the other entering grade level--entering first--a somewhat different picture emerges: Follow Through children began the year substantially behind their non-Follow Through counterparts. The magnitude of this difference was statistically significant ($p < .002$). By the end of the year, however, much of this gap had been closed so that the difference at the end of the 1969-70 school year could not be considered reliable; in probability terms, the two groups would be judged as essentially equivalent on the achievement measure ($p > .10$). The gains demonstrated by Follow Through entering first graders were markedly larger than those shown by non-Follow Through entering first graders. The difference between Follow Through and non-Follow Through in the Fall-to-Spring gain was clearly statistically significant ($p < .002$). Graphically the pattern for entering first graders, then, is that of converging development lines where Follow Through children closed much but not all of the gap that had obtained at the beginning of the school year.

The picture is essentially indeterminate for the non-entering first grade (the children who began regular school at kindergarten). Follow Through children started the year behind their non-Follow Through comparisons and ended the year without having closed this gap. The amount of change shown by both Follow Through and non-Follow Through was essentially equal ($p > .50$). The magnitude of the difference at the Spring point was not statistically significant ($p > .10$).

The second grade data in Table 14 reveal substantial differences between the Follow Through and the non-Follow Through samples. The mean achievement score for Follow Through children in Spring of 1969-70 was virtually identical to the score for non-Follow Through second graders at the beginning of the year. The Follow Through second graders gained more during that year than did non-Follow Through children but not enough for the differential gain to be considered statistically significant ($p > .10$).

Third grade figures reported in Table 14 do not differentiate children according to level of poverty. The third grade contrasts show a crossover in the change curves; the Follow Through children were slightly superior to non-Follow Through but not significantly so at the beginning of the school year. By the end of the school year the positions had reversed but, again, the difference was not statistically significant.

Tables in Appendix A identified in the note to Table 14 show greater detail on achievement test measures. They also show the relative performance of Follow Through and non-Follow Through pupils in kindergarten through grade two according to two additional poverty classifications not contained in Table 14--the Not poverty group included in the parent interviews and those children whose poverty level is not known since their parents were not included in the interview sample.

Table 15 is organized to parallel Table 14 preceding; it contains data that contrast Follow Through and non-Follow Through children at each grade level on the measure of attitudes toward school.

Two important caveats must be made with regard to the measures of attitudes toward school. The first is the fact that the scale used was scored in such a way that a lower score denotes a more positive attitude toward school than does a higher score. Because of this, a negative (-) sign in Table 15 highlights a difference that is favorable to Follow Through. The second caution has to do with the psychometric qualities of the scale itself. It was short (only three items) and the distributions of scores, both Fall and Spring, tended to be skewed: about 57% of both the Follow Through and non-Follow Through children provided a smiling face response at either Fall or Spring. These qualities of a brief scale and skewed response distribution limit the usefulness of this attitude measure.

Weaknesses in the measure notwithstanding, it is notable that all groups of children, with the exception of Follow Through third graders, showed a shift to more positive attitudes toward school between the Fall and Spring measurement points. In general, however, the differences between Follow Through and non-Follow Through were not statistically significant. At three grade levels--kindergarten, entering first, and non-entering first--Follow Through children showed greater increases in positive attitudes toward school than did non-Follow Through children. At the kindergarten level this difference was marginally significant ($.10 > p > .05$); at the entering first grade level the difference favoring Follow Through appeared reliable ($p < .04$); at the non-entering first grade level, however, the difference was not statistically significant, although it too was in the direction favoring Follow Through. At both the second and third grade levels, the difference favored non-Follow Through children; this difference was not statistically significant at the second grade but appeared to be so at third grade. (It should be re-emphasized that the third grade data do not differentiate according to poverty levels; hence third graders in Table 15 include the Not poverty group.)

Data from the scale that measured interpersonal feelings are summarized in Table 16. The same caveats that apply to the attitudes toward school scale also apply here--a negative score difference denotes a change toward more positive feelings, the scale itself is short (only four items), and the response distributions tend to be skewed.

Table 15

ATTITUDES TOWARD SCHOOL AND LEARNING SCORES FOR FOLLOW THROUGH AND NON-FOLLOW THROUGH PUPILS CLASSIFIED AS "CERTAIN POVERTY" AND "POSSIBLE POVERTY," 1969-1970

(Standardized Scores)

Grade Level	Statistic	Follow Through	Non-Follow Through	(FT)-(NFT)		
				Mean Diff.	t-Ratio	p
Kindergarten	No. Pupils	717	370			
	Fall Mean	51.71	51.15	0.56	0.82	>.80
	Spring Mean	49.49	50.44	-0.95	-1.52	>.10
	(Spr)-(Fall)	-2.22	-0.17	-1.51	-1.73	>.05
Entering First	No. Pupils	433	281			
	Fall Mean	52.97	51.58	1.39	1.76	>.05
	Spring Mean	48.74	49.34	-0.61	-0.84	>.20
	(Spr)-(Fall)	-4.23	-2.23	-2.00	-2.09	<.04
Non-Entering First	No. Pupils	298	63			
	Fall Mean	51.13	51.50	-0.37	-0.25	>.80
	Spring Mean	48.62	50.02	-1.40	-1.08	>.20
	(Spr)-(Fall)	-2.51	-1.48	-1.03	-0.57	>.50
Second	No. Pupils	93	23			
	Fall Mean	51.33	52.25	-0.92	-0.35	>.50
	Spring Mean	50.13	47.47	2.66	1.25	>.20
	(Spr)-(Fall)	-1.20	-4.78	3.58	1.21	>.20
Third*	No. Pupils	260	147			
	Fall Mean	49.23	51.75	-2.53	-2.47	<.02
	Spring Mean	49.92	49.76	0.16	0.15	>.80
	(Spr)-(Fall)	0.69	-1.99	2.68	2.04	<.05

Note: Lower score on attitude measure denotes more positive attitude toward school and learning; negative difference (-) desirable from Follow Through perspective.

See Appendix A for detailed summaries by poverty category and sponsor group. Attitude data appear in Tables A-11 through A-16 (kindergarten), A-28 through A-32 (entering first grade), A-44 through A-49 (non-entering first grade), and A-61 through A-65 (second grade).

* Third grade data include all pupils; poverty classification not possible at this grade since interviews not conducted to obtain family income and family size information.

Table 16

INTERPERSONAL FEELINGS SCORES FOR FOLLOW THROUGH AND NON-FOLLOW THROUGH PUPILS CLASSIFIED AS "CERTAIN POVERTY" AND "POSSIBLE POVERTY," 1969-1970
(Standardized Scores)

Grade Level	Statistic	Follow Through	Non-Follow Through	(FT)-(NFT)		
				Mean Diff.	t-Ratio	p
Kindergarten	No. Pupils	706	354			
	Fall Mean	51.17	50.78	0.39	0.57	>.50
	Spring Mean	49.60	50.03	-0.43	-0.68	≈.50
	(Spr)-(Fall)	-1.57	-0.76	-0.82	-0.93	>.20
Entering First	No. Pupils	419	273			
	Fall Mean	52.59	51.36	1.24	1.53	>.10
	Spring Mean	50.39	48.91	1.48	2.02	<.05
	(Spr)-(Fall)	-2.21	-2.45	0.24	0.25	>.80
Non-Entering First	No. Pupils	303	64			
	Fall Mean	51.00	50.18	0.82	0.61	>.50
	Spring Mean	49.55	51.14	-1.59	-1.13	>.20
	(Spr)-(Fall)	-1.44	0.96	-2.40	-1.42	>.10
Second	No. Pupils	91	23			
	Fall Mean	53.08	54.37	-1.30	-0.52	>.50
	Spring Mean	49.82	50.51	-0.68	-0.28	>.50
	(Spr)-(Fall)	-3.25	-3.87	0.61	0.20	>.80
Third*	No. Pupils	257	147			
	Fall Mean	49.96	50.28	-0.31	-0.34	>.50
	Spring Mean	50.50	49.85	0.65	0.74	>.20
	(Spr)-(Fall)	0.54	-0.42	0.96	0.86	>.20

Note: Lower score on attitude measure denotes more positive interpersonal feelings toward school and learning; negative difference (-) desirable from Follow Through perspective.

See Appendix A for detailed summaries by poverty category and sponsor group. Interpersonal feelings data appear in Tables A-17 through A-22 (kindergarten), A-33 through A-37 (entering first grade), A-50 through A-55 (non-entering first grade), and A-66 through A-70 (second grade).

*Third grade data include all pupils; poverty classification not possible at this grade since interviews not conducted to obtain family income and family size information.

The trends in interpersonal feelings are somewhat different than those shown previously in attitudes toward school. The attitudes toward school measure had suggested a fairly regular ordering of scores revealing differences favoring Follow Through at the lower grades but not at the higher ones. On the interpersonal feelings measures the picture is erratic. Differences favor Follow Through but not significantly so at kindergarten and non-entering first grade and at second grade. Among entering first grade children and third grade children, however, the differences favor non-Follow Through. Only at entering first grade, however, are any of these differences statistically significant.

In summary: the findings on the achievement scores lead to the unequivocal conclusion that Follow Through objectives of increased school achievement were being realized in 1969-70 at the entering grade levels. For these children, who make up the first cohort group in the longitudinal evaluation, the trend is positive and strong. On the rate of change measures, Follow Through children exceed non-Follow Through at both kindergarten and entering first grade. At the kindergarten level, Follow Through children exceed non-Follow Through both in rate of gain and absolute level of achievement. At entering first grade, the rate of gain for Follow Through children is clearly sharper than that for non-Follow Through but non-Follow Through children are still somewhat higher (but not significantly so) in their measured achievement.

The differences in measured attitudes are less dramatic but generally show a favorable pattern, especially among the kindergartners.

Interactions Between the Outcome Measures and Preschool Experience, Poverty Level, and Services Received

Three policy variables central to the assessment of Follow Through are level of poverty, preschool experience, and extent of Follow Through services received. Data are presented below that summarize the combined impact of these three variables on the outcome measures of school achievement, attitudes toward school, and interpersonal feelings at all grade levels.

An extensive set of tables in Appendix A contain the quantitative data from which the sign (+ or -) tables that follow were drawn.* These sign tables (17 through 25) summarize the differences between Follow Through and non-Follow Through children on three indices: (1) the Fall, or pre, measure; (2) the Spring, or post, measure; and (3) the Spring-to-Fall difference. The reader is reminded that six patterns of signs are possible. Two patterns (+++ and ---) show divergence between Follow Through and non-Follow Through. Two patterns (--+ and ++-) show convergence. The third pair of patterns (-++ and +--) show a crossover between Follow Through and non-Follow Through.

Interactions Associated with Achievement

Follow Through effects expressed in achievement score differences are shown in relation to preschool experience and poverty classification by grade level in Table 17. The cell in the lower right corner of the table shows the overall effects according to grade level:

(1) At kindergarten, Follow Through pupils exceeded non-Follow Through in the Fall, exceeded non-Follow Through pupils in the Spring, and gained more between Fall and Spring than did non-Follow Through pupils. This pattern appears in the table as +++.

(2) At entering first grade, non-Follow Through children exceeded Follow Through children in the Fall, exceeded Follow Through children in the Spring, but gained less between Fall and Spring than did Follow Through pupils. This pattern is shown as --+.

---

* Tables A-71 through A-109 present quantitative data in more detail.

Table 17

DIRECTION OF DIFFERENCES BETWEEN FOLLOW THROUGH AND NON-FOLLOW THROUGH PUPILS AT ALL GRADES ON ACHIEVEMENT TEST SCORES OBTAINED FALL AND SPRING, 1969-70, BY PRESCHOOL EXPERIENCE AND POVERTY CLASSIFICATION*

Preschool Experience	1969-70 School Grade	Poverty Classification				
		Certain Poverty	Possible Poverty	Not Poverty	Unknown	Total
Head Start	Kindergarten	+ + +	+ + +	- - +	+ + +	- + +
	Entering 1st	- - +	- + +	- - -	- + +	- + +
	Non-entering 1st	- - -	- - -	- - +	- - -	- - -
	2nd	- - +	- - +		- - +	- - +
	3rd†					
Head Start equivalent	Kindergarten	- + +	- - -	+ + -	- - +	- - -
	Entering 1st	- - -	- - +	- - +	- - -	- - +
	Non-entering 1st	- - +	- - +	+ + +	- + +	- + +
	2nd	+ + -	--	- - -	- - +	- - +
	3rd					
Both Head Start and equivalent	Kindergarten					
	Entering 1st				- - +	- - +
	Non-entering 1st	- - -	- - +	- - -	+ - -	+ - -
	2nd				+ + +	+ + -
	3rd					
No preschool	Kindergarten	+ + +	+ + +	+ + +	- - -	+ + +
	Entering 1st	- - +	- - +	- - +	- + +	- - +
	Non-entering 1st	+ + -	+ - -	- - -	- - -	- - -
	2nd	- - +	- - -	+ + +	- - -	- - -
	3rd					
Total	Kindergarten	+ + +	+ + +	+ + +	- + +	+ + +
	Entering 1st	- - +	- - +	- - +	- - +	- - +
	Non-entering 1st	- - -	- - +	- - -	- - +	- - +
	2nd	- - -	- - +	- - -	- - -	- - -
	3rd					

---

*

Sign	Fall (Left-hand)	Spring (Middle)	[Spring]-[Fall] (Right-hand)
+	$FT_{Pre} > NFT_{Pre}$	$FT_{Post} > NFT_{Post}$	$FT_{(Post-Pre)} > NFT_{(Post-Pre)}$
-	$FT_{Pre} < NFT_{Pre}$	$FT_{Post} < NFT_{Post}$	$FT_{(Post-Pre)} < NFT_{(Post-Pre)}$

† Poverty classification not possible at third grade since interviews not conducted to obtain family income and family size information.

(3) The overall pattern for non-entering first graders was identical to that for entering first graders (--+).

(4) The second grade non-Follow Through pupils exceeded Follow Through in the Fall, exceeded them in the Spring, and gained more between Fall to Spring. This pattern is ---.

Any one of the cells in Table 17 may be read in a manner similar to that for the overall total. When Table 17 is examined in parallel with its associated data tables in Appendix A (Tables A-71 through A-74), the following generalizations emerge:

(1) Differences favoring Follow Through occurred more often at the entering grade levels (kindergarten and entering first grade) than at the higher grade levels. This generalization holds for both the Follow Through vs non-Follow Through difference on the Spring measure and for the Follow Through vs non-Follow Through difference in Fall-to-Spring change.

(2) At entering grade levels, positive differences favoring Follow Through were more likely to occur among children classified as Certain poverty and Possible poverty than among children classified as Not poverty. At non-entering grade levels, the picture is less clear; if anything, differences favoring Follow Through (or the smallest differences favoring non-Follow Through) are somewhat more likely to occur among less poor than more poor children.

(3) At entering grade levels, children who had experienced Head Start and children who had had no preschool whatsoever were more likely to show differences favoring Follow Through than were children who experienced a program classified as "equivalent" to Head Start. At non-entering grade levels, however, some advantage seems to follow from having participated in a program classified as equivalent to Head Start rather than in Head Start itself. Nevertheless, for all grade levels combined, the trend is reasonably clear--Follow Through children who experienced Head Start scored better on the achievement battery than did non-Follow Through children who had experienced Head Start.

Table 18 shows interactions between poverty classification and Follow Through services as they influence the achievement test scores. This table may be read in a manner identical to the preceding table. Table 18 shows patterns that are in harmony with those discussed in the preceding table. Generally, the effects most favorable to Follow Through occurred in the entering grade levels. Greatest gains overall were shown by children who received all Follow Through services rather than part of them.*

The final table in this set of three--Table 19--summarizes the interactions between preschool experience and Follow Through services over all grade levels as they influence performance on the achievement tests.† In this table it is possible to include third grade in addition to lower grades. The patterns revealed in Table 19 support the findings discussed above:

(1) Differences favoring Follow Through are more prominent in the lower grades than in the higher grades.

(2) Gain differences favoring Follow Through were more likely when children received full Follow Through services than when they received less than full services.

These three tables, supplemented by the 13 tables in Appendix A presenting achievement data, support the generalization that Follow Through's policy goals are being realized, particularly among entering grade level children who constitute the first group to have experienced acceptably implemented programs. Particularly when effects are expressed as achievement test score gains from Fall to Spring, the children who apparently received the greatest advantages from Follow Through participation were those who (1) were eligible for Follow Through on the poverty criterion, (2) had experienced Head Start or comparable programs prior to entry into Follow Through, and (3) were receiving all services rather than partial services.

Interactions Associated With Attitudes Toward School

The same combinations of policy variables (poverty level, preschool experience, and amount of Follow Through services) were examined with reference to the outcome measure of attitudes toward school. These data are summarized in sign (+ or -) form and are supplemented by tables in Appendix A. The meaning of the signs is similar to that in the preceding set of tables, with one critical difference--in Tables 20 through 22 a

---

* See Tables A-75 through A-78 in Appendix A.

† See Tables A-79 through A-83 in Appendix A.

Table 18

DIRECTION OF DIFFERENCES BETWEEN FOLLOW THROUGH AND NON-FOLLOW THROUGH PUPILS AT ALL GRADES ON ACHIEVEMENT TEST SCORES OBTAINED FALL AND SPRING, 1969-70, BY POVERTY CLASSIFICATION AND FOLLOW THROUGH SERVICES RECEIVED*

Poverty Classification	1969-70 School Grade	Follow Through Services			Total
		All	Part	Unknown	
Certain poverty	Kindergarten	+ + +	- + +	+ + +	+ + +
	Entering 1st	- - +	+ + +	- - +	- - +
	Non-entering 1st	- - -	+ + +	- - -	- - -
	2nd	- - +	- + +		- - -
	3rd†				
Possible poverty	Kindergarten	+ + +	- - -	+ + -	+ + +
	Entering 1st	- - +	+ + -		- - +
	Non-entering 1st	- - +	+ + +	- - +	- - +
	2nd	- - +	+ + +		- - +
	3rd				
Not poverty	Kindergarten	- - +	+ + -	+ + -	+ + +
	Entering 1st	- - +	- - +	- - +	- - +
	Non-entering 1st	- - -	+ + +	- - -	- - -
	2nd	- - +	+ - -		- - -
	3rd				
Poverty not known (no interview conducted)	Kindergarten	- - +	+ - -	+ + +	- + +
	Entering 1st	- - +	+ + -	+ + -	- - +
	Non-entering 1st	- - +	- - -	- - +	- - +
	2nd	- - -	+ + -	- - -	- - -
	3rd				
Total	Kindergarten	- + +	+ + -	+ + +	+ + +
	Entering 1st	- - +	+ + -	+ - -	- - +
	Non-entering 1st	- - +	+ + -	- - -	- - +
	2nd	- - -	+ + -	- - -	- - -
	3rd				

---

*

Sign	Fall (Left-hand)	Spring (Middle)	[Spring]-[Fall] (Right-hand)
+	$FT_{Pre} > NFT_{Pre}$	$FT_{Post} > NFT_{Post}$	$FT_{(Post-Pre)} > NFT_{(Post-Pre)}$
-	$FT_{Pre} < NFT_{Pre}$	$FT_{Post} < NFT_{Post}$	$FT_{(Post-Pre)} < NFT_{(Post-Pre)}$

† Poverty classification not possible at third grade since interviews not conducted to obtain family income and family size information.

Table 19

DIRECTION OF DIFFERENCES BETWEEN FOLLOW THROUGH AND NON-FOLLOW THROUGH PUPILS AT ALL GRADES ON ACHIEVEMENT TEST SCORES OBTAINED FALL AND SPRING, 1969-70, BY PRESCHOOL EXPERIENCE AND FOLLOW THROUGH SERVICES RECEIVED*

Preschool Experience	1969-70 School Grade	Follow Through Services All	Part	Unknown	Total
Head Start	Kindergarten	+ + +	- - +	+ + +	- + +
	Entering 1st	- - +	+ + +	+ + +	- + +
	Non-entering 1st	- - -	- - -	- - +	- - -
	2nd	- - +	+ + -	- - +	- - +
	3rd	- - -	+ - -	+ - -	+ - -
Head Start equivalent	Kindergarten	- - +	+ + -	+ + +	- - -
	Entering 1st	- - +	- + +	- - -	- - +
	Non-entering 1st	- + +	+ + +	- + +	- + +
	2nd	- - +	+ - -	- - -	- - +
	3rd	- + +	- + +	- - -	- + +
Both Head Start and equivalent	Kindergarten				
	Entering 1st	- - +	- - +		- - +
	Non-entering 1st	+ - -	- - -	- - -	+ - -
	2nd	+ + -		- - -	+ + -
	3rd				
No preschool	Kindergarten	- + +	+ + -	+ + -	+ + +
	Entering 1st	- - +	+ + -	- - -	- - +
	Non-entering 1st	- - -	+ + -	- - -	- - -
	2nd	- - -	+ + -	- - -	- - -
	3rd	- - -	+ + -	+ + -	- - -
Total	Kindergarten	- + +	+ + -	+ + +	+ + +
	Entering 1st	- - +	+ + -	+ - -	- - +
	Non-entering 1st	- - +	+ + -	- - -	- - +
	2nd	- - -	+ + -	- - -	- - -
	3rd	- - -	+ + -	+ - -	+ - -

---

* Sign	Fall (Left-hand)	Spring (Middle)	[Spring]-[Fall] (Right-hand)
+	$FT_{Pre} > NFT_{Pre}$	$FT_{Post} > NFT_{Post}$	$FT_{(Post-Pre)} > NFT_{(Post-Pre)}$
-	$FT_{Pre} < NFT_{Pre}$	$FT_{Post} < NFT_{Post}$	$FT_{(Post-Pre)} < NFT_{(Post-Pre)}$

negative sign in the table denotes a desirable difference from the viewpoint of Follow Through. (Attitude scales were scored in such a way that the lowest score was associated with the most positive attitude.)

The overall findings on attitudes toward school are neither as clear nor as readily interpreted as the findings on measures of school achievement. Overall, as summarized in the lower righthand cells of Tables 20, 21, and 22, Follow Through pupils at kindergarten, entering first, non-entering first, and second grade showed more shift to more positive attitudes toward school than did their non-Follow Through counterparts. This did not obtain at grade three. Children at kindergarten and second grade reflected more positive attitudes toward school than did their non-Follow Through companions on the Spring measure but this was not true for children at entering first, non-entering first, and third grade.

The magnitude of the differences shown by signs in Table 20, 21, and 22, and supported quantitatively in Appendix Table A-84 through A-96, are not large enough to permit a confident conclusion that Follow Through and non-Follow Through children differ in their attitudes toward school. At the entering grade levels, the data suggest more positive attitudes by Follow Through than non-Follow Through pupils among those who are classified as most poor. The reverse is suggested when the least poor children are contrasted. Over all grade levels (except third) the greatest shifts toward more positive attitudes occurred among children who received all Follow Through services. There is some indication that children who experienced Head Start or a comparable preschool program were more likely to show the largest shifts to more positive attitudes toward school. Generally, however, the erratic character of the findings according to any of the three variables or combinations among them is consistent with the overall lack of reliable difference between Follow Through and non-Follow Through on the measure of attitudes toward school.

Interactions Associated With Interpersonal Feelings

The outcome measure of interpersonal feelings is summarized in Tables 23, 24, and 25 in relation to the policy variables of poverty classification, preschool experience, and Follow Through services. As was the case in the measures of attitudes toward school, a negative sign in the table denotes more positive interpersonal feelings for Follow Through children than for non-Follow Through children. Tables A-97 through A-109 in Appendix A provide quantitative detail in support of the sign tables.

Table 20

DIRECTION OF DIFFERENCES BETWEEN FOLLOW THROUGH AND NON-FOLLOW THROUGH PUPILS AT ALL GRADES ON ATTITUDES TOWARD SCHOOL SCORES OBTAINED FALL AND SPRING, 1969-70, BY PRESCHOOL EXPERIENCE AND POVERTY CLASSIFICATION*

Preschool Experience	1969-70 School Grade	Poverty Classification				
		Certain Poverty	Possible Poverty	Not Poverty	Unknown	Total
Head Start	Kindergarten	- - +	+ + -	- + +	+ - -	- - +
	Entering 1st	+ - -	+ - -	- + +	- - -	+ - -
	Non-entering 1st	- - +	+ + -	- - +	- + +	- + +
	2nd	- + +	- + +		- - -	- - -
	3rd†					
Head Start equivalent	Kindergarten	+ - -	+ + -	- + +	+ - -	+ - -
	Entering 1st	+ + -	+ + -	+ + -	+ - -	+ + -
	Non-entering 1st	- + +	+ - -	- + +	+ - -	+ - -
	2nd	+ + -		+ - -	+ + +	+ + -
	3rd					
Both Head Start and equivalent	Kindergarten					
	Entering 1st				- + +	- + +
	Non-entering 1st	- + +	+ - -	- + +	+ - -	- - -
	2nd				- - -	- - -
	3rd					
No preschool	Kindergarten	+ - -	- - -	+ - -	+ + +	+ + -
	Entering 1st	+ + -	- + +	+ + +	+ + -	+ + +
	Non-entering 1st	- - -	+ - -	+ - -	+ + +	+ + -
	2nd	- + +	+ + +	+ + -	- - -	+ - -
	3rd					
Total	Kindergarten	+ - -	+ - -	+ + +	+ + +	+ - -
	Entering 1st	+ - -	- - -	+ + +	+ - -	+ + -
	Non-entering 1st	- - +	+ - -	- - -	+ + -	+ + -
	2nd	- + +	- + +	+ - -	- - -	- - -
	3rd					

---

* Sign	Fall (Left-hand)	Spring (Middle)	[Spring]-[Fall] (Right-hand)
+	$FT_{Pre} > NFT_{Pre}$	$FT_{Post} > NFT_{Post}$	$FT_{(Post-Pre)} > NFT_{(Post-Pre)}$
-	$FT_{Pre} < NFT_{Pre}$	$FT_{Post} < NFT_{Post}$	$FT_{(Post-Pre)} < NFT_{(Post-Pre)}$

† Poverty classification not possible at third grade since interviews not conducted to obtain family income and family size information.

Note: Lower score on attitude measure denotes more positive attitude toward school and learning; negative difference (-) desirable from Follow Through perspective.

Table 21

DIRECTION OF DIFFERENCES BETWEEN FOLLOW THROUGH AND NON-FOLLOW THROUGH PUPILS AT ALL GRADES ON ATTITUDES TOWARD SCHOOL SCORES OBTAINED FALL AND SPRING, 1969-70, BY POVERTY CLASSIFICATION AND FOLLOW THROUGH SERVICES RECEIVED*

Poverty Classification	1969-70 School Grade	Follow Through Services All	Part	Unknown	Total
Certain poverty	Kindergarten	- - -	+ - -	+ - -	+ - -
	Entering 1st	+ - -	+ - -	+ - -	+ - -
	Non-entering 1st	- - +	- - +	- - -	- - +
	2nd	- + +	- + +		- - +
	3rd†				
Possible poverty	Kindergarten	+ + -	+ + -	- - -	+ - -
	Entering 1st	+ - -	- - -		- - -
	Non-entering 1st	+ - -	+ - -	+ - -	+ - -
	2nd	- + +	- - +		- + +
	3rd				
Not poverty	Kindergarten	- + +	+ - -	+ + -	+ + +
	Entering 1st	+ + +	+ + +	- + +	+ + +
	Non-entering 1st	- - -	- + +	+ + +	- - -
	2nd	+ - -	+ - -		+ - -
	3rd				
Poverty not known (no interview conducted)	Kindergarten	+ + +	+ + +	+ + -	+ + +
	Entering 1st	+ - -	- - -	+ + -	+ - -
	Non-entering 1st	+ + -	- + +	+ + -	+ + -
	2nd	- - -	- - +	- - +	- - -
	3rd				
Total	Kindergarten	+ + -	+ - -	+ - -	+ - -
	Entering 1st	+ + -	- - -	- - +	+ + -
	Non-entering 1st	+ + -	- + +	+ + -	+ + -
	2nd	- - -	- - -	- - +	- - -
	3rd				

---

* Sign	Fall (Left-hand)	Spring (Middle)	[Spring]-[Fall] (Right-hand)
+	$FT_{Pre} > NFT_{Pre}$	$FT_{Post} > NFT_{Post}$	$FT_{(Post-Pre)} > NFT_{(Post-Pre)}$
-	$FT_{Pre} < NFT_{Pre}$	$FT_{Post} < NFT_{Post}$	$FT_{(Post-Pre)} < NFT_{(Post-Pre)}$

† Poverty classification not possible at third grade since interviews not conducted to obtain family income and family size information.

Note: Lower score on attitude measure denotes more positive attitude toward school and learning; negative difference (-) desirable from Follow Through perspective.

Table 22

DIRECTION OF DIFFERENCES BETWEEN FOLLOW THROUGH AND NON-FOLLOW THROUGH PUPILS AT ALL GRADES ON ATTITUDES TOWARD SCHOOL SCORES OBTAINED FALL AND SPRING, 1969-70, BY PRESCHOOL EXPERIENCE AND FOLLOW THROUGH SERVICES RECEIVED*

Preschool Experience	1969-70 School Grade	Follow Through Services			
		All	Part	Unknown	Total
Head Start	Kindergarten	- + +	+ - -	- - +	- - +
	Entering 1st	+ - -	+ - -	+ - -	+ - -
	Non-entering 1st	- + +	- + +	- - +	- + +
	2nd	- - -	- - +	- + +	- - -
	3rd	+ + +	- + +	- + +	- + +
Head Start equivalent	Kindergarten	+ + -	+ - -	- - +	+ - -
	Entering 1st	+ + -	+ - -	+ - -	+ + -
	Non-entering 1st	+ + -	- - +	+ + -	+ - -
	2nd	+ + -	+ + +	- - -	+ + -
	3rd	- + +	- - -	- - +	- - +
Both Head Start and equivalent	Kindergarten				
	Entering 1st	+ + +	- + +	--	- + +
	Non-entering 1st	- - -	+ + +	- + +	- - -
	2nd	- - -		- + +	- - -
	3rd				
No preschool	Kindergarten	+ + +	- - -	+ + -	+ + -
	Entering 1st	+ + +	+ + +	- + +	+ + +
	Non-entering 1st	+ + -	- + +	+ + -	+ + -
	2nd	+ - -	- - -	- - -	+ - -
	3rd	- - +	- + +	- + +	- - +
Total	Kindergarten	+ + -	+ - -	+ - -	+ - -
	Entering 1st	+ + -	- - -	- - +	+ + -
	Non-entering 1st	+ + -	- + +	+ + -	+ + -
	2nd	- - -	- - -	- - +	- - -
	3rd	- - +	- + +	- + +	- + +

---

* Sign	Fall (Left-hand)	Spring (Middle)	[Spring]-[Fall] (Right-hand)
+	$FT_{Pre} > NFT_{Pre}$	$FT_{Post} > NFT_{Post}$	$FT_{(Post-Pre)} > NFT_{(Post-Pre)}$
-	$FT_{Pre} < NFT_{Pre}$	$FT_{Post} < NFT_{Post}$	$FT_{(Post-Pre)} < NFT_{(Post-Pre)}$

Note: Lower score on attitude measure denotes more positive attitude toward school and learning; negative difference (-) desirable from Follow Through perspective.

The overall differences shown in Tables 23, 24, and 25, are not statistically significant. As a whole, Follow Through pupils show slightly less positive interpersonal feelings toward classmates and teachers than do non-Follow Through pupils but the difference is not significant. Follow Through pupils at grade levels beyond kindergarten are somewhat more likely to have shown larger shifts toward more positive feelings than non-Follow Through but, again, the difference is not significant. There is some tendency for Follow Through pupils at all grade levels classified as Certain poverty to show both more positive interpersonal feelings and larger shifts to more positive interpersonal feelings than for children in other poverty classifications.

The picture is even less clear when the preschool experience variable is considered. What shows as a more favorable pattern for children with such experience at the entering grade levels is a less favorable pattern for children at non-entering grade levels.

The differences most likely to favor Follow Through according to the Follow Through services variable occur among children who receive partial rather than all services; this trend is more evident among entering grade level children than among children at higher grade levels.

In summary: slightly more positive interpersonal feelings are reflected by Follow Through children at higher grade levels than at lower grade levels. On the other hand, children at lower grade levels are more likely to show a shift toward more positive interpersonal feelings. The safest conclusion that seems warranted is that the differences between Follow Through and non-Follow Through children on the measure, regardless of level of poverty, preschool experience, or extent of Follow Through services, are too capricious to be considered statistically significant.

Table 23

DIRECTION OF DIFFERENCES BETWEEN FOLLOW THROUGH AND NON-FOLLOW THROUGH PUPILS AT ALL GRADES ON INTERPERSONAL FEELINGS SCORES OBTAINED FALL AND SPRING, 1969-70, BY PRESCHOOL EXPERIENCE AND POVERTY CLASSIFICATION*

Preschool Experience	1969-70 School Grade	Poverty Classification				
		Certain Poverty	Possible Poverty	Not Poverty	Unknown	Total
Head Start	Kindergarten	- - -	+ + +	- - +	- + +	- - +
	Entering 1st	+ + -	- + +	- - +	+ - -	+ + +
	Non-entering 1st	- - -	+ + +	+ - -	- + +	+ + +
	2nd	- - -	- + +		- - -	- - -
	3rd†					
Head Start equivalent	Kindergarten	+ - -	- + +	+ + +	+ - -	+ + -
	Entering 1st	+ + -	+ + +	+ + -	+ + -	+ + -
	Non-entering 1st	+ - -	+ + -	- + +	+ + +	+ + +
	2nd	+ - -		+ - -	+ + +	+ + -
	3rd					
Both Head Start and equivalent	Kindergarten					
	Entering 1st				+ + -	+ + -
	Non-entering 1st	- - -	- - -	- - -	+ + -	- - -
	2nd				- + +	- - +
	3rd					
No preschool	Kindergarten	+ - -	+ - -	- + +	+ + +	+ + -
	Entering 1st	+ + +	+ + +	+ + +	+ - -	+ + -
	Non-entering 1st	- - -	- - -	+ + +	+ + -	+ + -
	2nd	- - +	+ + -	- + +	+ - -	+ - -
	3rd					
Total	Kindergarten	+ - -	+ + -	+ + +	+ + +	+ + +
	Entering 1st	+ + -	- + +	+ + -	+ - -	+ + -
	Non-entering 1st	+ - -	+ - -	+ + -	+ + -	+ + -
	2nd	- - -	+ + +	+ - -	+ - -	+ - -
	3rd					

---

* Sign	Fall (Left-hand)	Spring (Middle)	[Spring]-[Fall] (Right-hand)
+	$FT_{Pre} > NFT_{Pre}$	$FT_{Post} > NFT_{Post}$	$FT_{(Post-Pre)} > NFT_{(Post-Pre)}$
-	$FT_{Pre} < NFT_{Pre}$	$FT_{Post} < NFT_{Post}$	$FT_{(Post-Pre)} < NFT_{(Post-Pre)}$

† Poverty classification not possible at third grade since interviews not conducted to obtain family income and family size information.

Note: Lower score on attitude measure denotes more positive interpersonal feelings; negative difference (-) desirable from Follow Through perspective.

Table 24

DIRECTION OF DIFFERENCES BETWEEN FOLLOW THROUGH AND NON-FOLLOW THROUGH PUPILS AT ALL GRADES ON INTERPERSONAL FEELINGS SCORES OBTAINED FALL AND SPRING, 1969-70, BY POVERTY CLASSIFICATION AND FOLLOW THROUGH SERVICES RECEIVED*

Poverty Classification	1969-70 School Grade	Follow Through Services			
		All	Part	Unknown	Total
Certain poverty	Kindergarten	- - -	- - -	+ - -	+ - -
	Entering 1st	+ + -	+ - -	+ + -	+ + -
	Non-entering 1st	+ - -	- - -	+ + -	+ - -
	2nd	- - -	- - +		- - -
	3rd†				
Possible poverty	Kindergarten	+ + +	- - +	+ - -	+ + -
	Entering 1st	- + +	- + +		- + +
	Non-entering 1st	+ - -	- - +	- + +	+ - -
	2nd	+ + +	- - +		+ + +
	3rd				
Not poverty	Kindergarten	+ + +	- - -	+ + -	+ + +
	Entering 1st	+ + +	+ + -	- + +	+ + -
	Non-entering 1st	+ + -	- + +	+ + +	+ + -
	2nd	+ + -	- - -		+ - -
	3rd				
Poverty not known (no interview conducted)	Kindergarten	+ + +	+ + -	+ + +	+ + +
	Entering 1st	+ - -	- - -	+ - -	+ - -
	Non-entering 1st	+ + +	+ + -	+ + -	+ + -
	2nd	+ - -	- - +	+ - -	+ - -
	3rd				
Total	Kindergarten	+ + +	- - -	+ + -	+ + +
	Entering 1st	+ + -	+ - -	- - +	+ + -
	Non-entering 1st	+ + -	+ + -	+ + +	+ + -
	2nd	+ - -	- - +	- - -	+ - -
	3rd				

---

*

Sign	Fall (Left-hand)	Spring (Middle)	[Spring]-[Fall] (Right-hand)
+	$FT_{Pre} > NFT_{Pre}$	$FT_{Post} > NFT_{Post}$	$FT_{(Post-Pre)} > NFT_{(Post-Pre)}$
-	$FT_{Pre} < NFT_{Pre}$	$FT_{Post} < NFT_{Post}$	$FT_{(Post-Pre)} < NFT_{(Post-Pre)}$

† Poverty classification not possible at third grade since interviews not conducted to obtain family income and family size information.

Note: Lower score on attitude measure denotes more positive interpersonal feelings; negative difference (-) desirable from Follow Through perspective.

Table 25

DIRECTION OF DIFFERENCES BETWEEN FOLLOW THROUGH AND NON-FOLLOW THROUGH PUPILS AT ALL GRADES ON INTERPERSONAL FEELINGS SCORES OBTAINED FALL AND SPRING, 1969-70, BY PRESCHOOL EXPERIENCE AND FOLLOW THROUGH SERIVICES RECEIVED*

Preschool Experience	1969-70 School Grade	Follow Through Services			Total
		All	Part	Unknown	
Head Start	Kindergarten	- - +	- - +	+ - -	- - +
	Entering 1st	+ + +	- - -	+ + -	+ + +
	Non-entering 1st	+ + +	- + +	- + +	+ + +
	2nd	- - -	- - +	- - +	- - -
	3rd	+ + +	- + +	- + +	- + +
Head Start equivalent	Kindergarten	+ + -	+ - -	- + +	+ + -
	Entering 1st	+ + -	+ + -	+ + -	+ + -
	Non-entering 1st	+ + +	- + +	- - -	+ + +
	2nd	+ + -	- + +	- - +	+ + -
	3rd	+ - -	+ - -	- - -	+ - -
Both Head Start and equivalent	Kindergarten				
	Entering 1st	+ + -	+ + -		+ + -
	Non-entering 1st	- - -	+ - -	- + +	- - -
	2nd	- - +		- - +	- - +
	3rd				
No preschool	Kindergarten	+ + +	- - -	+ + -	+ + -
	Entering 1st	+ + +	+ - -	- + +	+ + -
	Non-entering 1st	+ + -	+ + -	+ + +	+ + -
	2nd	+ - -	- - +	+ + -	+ - -
	3rd	- + +	- - -	+ - -	- - +
Total	Kindergarten	+ + +	- - -	+ + -	+ + +
	Entering 1st	+ + -	+ - -	- - +	+ + -
	Non-entering 1st	+ + -	+ + -	+ + +	+ + -
	2nd	+ - -	- - +	- - -	+ - -
	3rd	+ + +	- + +	- + +	- + +

---

* Sign	Fall (Left-hand)	Spring (Middle)	[Spring]-[Fall] (Right-hand)
+	$FT_{Pre} > NFT_{Pre}$	$FT_{Post} > NFT_{Post}$	$FT_{(Post-Pre)} > NFT_{(Post-Pre)}$
-	$FT_{Pre} < NFT_{Pre}$	$FT_{Post} < NFT_{Post}$	$FT_{(Post-Pre)} < NFT_{(Post-Pre)}$

Note: Lower score on attitude measure denotes more positive interpersonal feelings; negative difference (-) desirable from Follow Through perspective.

The Outcome Measures, by Poverty Classification and Sponsor Group

In the following pages, figures are used to display pupil performance on the achievement test battery, the attitudes toward school scale, and the interpersonal feelings scale. Kindergartners are shown first, followed by entering first graders, non-entering first graders, and second graders.

The upper (line) graph in each figure contrasts Follow Through and non-Follow Through children at both Fall and Spring points according to their poverty classification. All children for whom test data were available are reflected in these graphs; children whose parents were not interviewed, and therefore cannot be included in one of the three poverty classifications, are included in the category "No Income Information."

The lower (bar) graph in each figure contrasts the performance of the same Follow Through and non-Follow Through children in all poverty categories according to sponsor group (see Section III).

For each pair of graphs that follow, a set of supporting tables appears in Appendix A in the same sequence as the figures. The tables include some key information not reflected in the figures:

(1) The total number of children in each poverty classification and the number on whom scores were available.

(2) The means and standard deviations for both the Follow Through and non-Follow through distributions according to poverty level.

(3) The mean difference and the standard error of the mean difference between Follow Through and non-Follow Through in each poverty stratum.

(4) The t-ratio associated with each mean difference.

(5) The poverty classifications within each sponsor group as well as the poverty classifications for children at each grade level.

Supporting tables in Appendix A are arranged as follows: kindergarten (A-5 through A-22), entering first grade (A-23 through A-37), non-entering first grade (A-38 through A-55), and second grade (A-56 through A-70).

Kindergarten

Achievement Test Performance--The graphs in Figure 1 show Follow Through pupils exceeding non-Follow Through pupils in achievement test performance both in the Fall and in the Spring. The two groups were virtually identical in the Fall in their mean scores but the difference between them was statistically significant and favored Follow Through ($p < .02$) in the Spring. The difference in the Fall-to-Spring gains between Follow Through and non-Follow Through kindergartners favored Follow Through and was clearly significant ($p < .005$).

The upper graph in the figure shows the characteristic positive correlation between measured achievement and poverty level. The most notable feature of this relationship is the fact that the largest difference between Follow Through and non-Follow Through in Fall-to-Spring gains occurred among children classified as Certain poverty. That difference, in fact, dominates the overall difference between Follow Through and non-Follow Through and was highly significant ($p < .002$).

The lower graph in the figure shows different patterns for each of the five sponsor groups represented at the kindergarten level. In Sponsor Group 1, Follow Through children began the year at a level below their non-Follow Through counterparts and ended the year with higher mean achievement scores. The difference between Follow Through and non-Follow Through at the Spring point was large enough to be significant ($p < .05$). Because Follow Through children gained substantially more during the year, the difference in gain was highly significant overall ($p < .001$); the largest relative difference occurred among children classified as Certain poverty ($p < .001$) but the difference among children categorized as Possible poverty was also reliable ($p < .05$).

In some contrast to Sponsor Group 1, the children in Sponsor Group 2 began the school year at a lower level than their non-Follow Through comparisons and completed the year at a similar relative position. The differences between the two groups at the Fall test point approached statistical significance ($p < .20$) and was clearly significant at the Spring point ($p < .001$). The difference in Fall-to-Spring gains between Follow Through and non-Follow Through children was marginally significant overall ($p \simeq .10$) but was not statistically significant at any single poverty level.

Sponsor Group 3 displayed an achievement test pattern that was virtually the reverse of that demonstrated in Sponsor Group 2--the Follow Through children began the year ahead of their non-Follow Through comparisons and finished the year at a higher mean level. At neither the

Reduction of Gap CP/NP major issue !

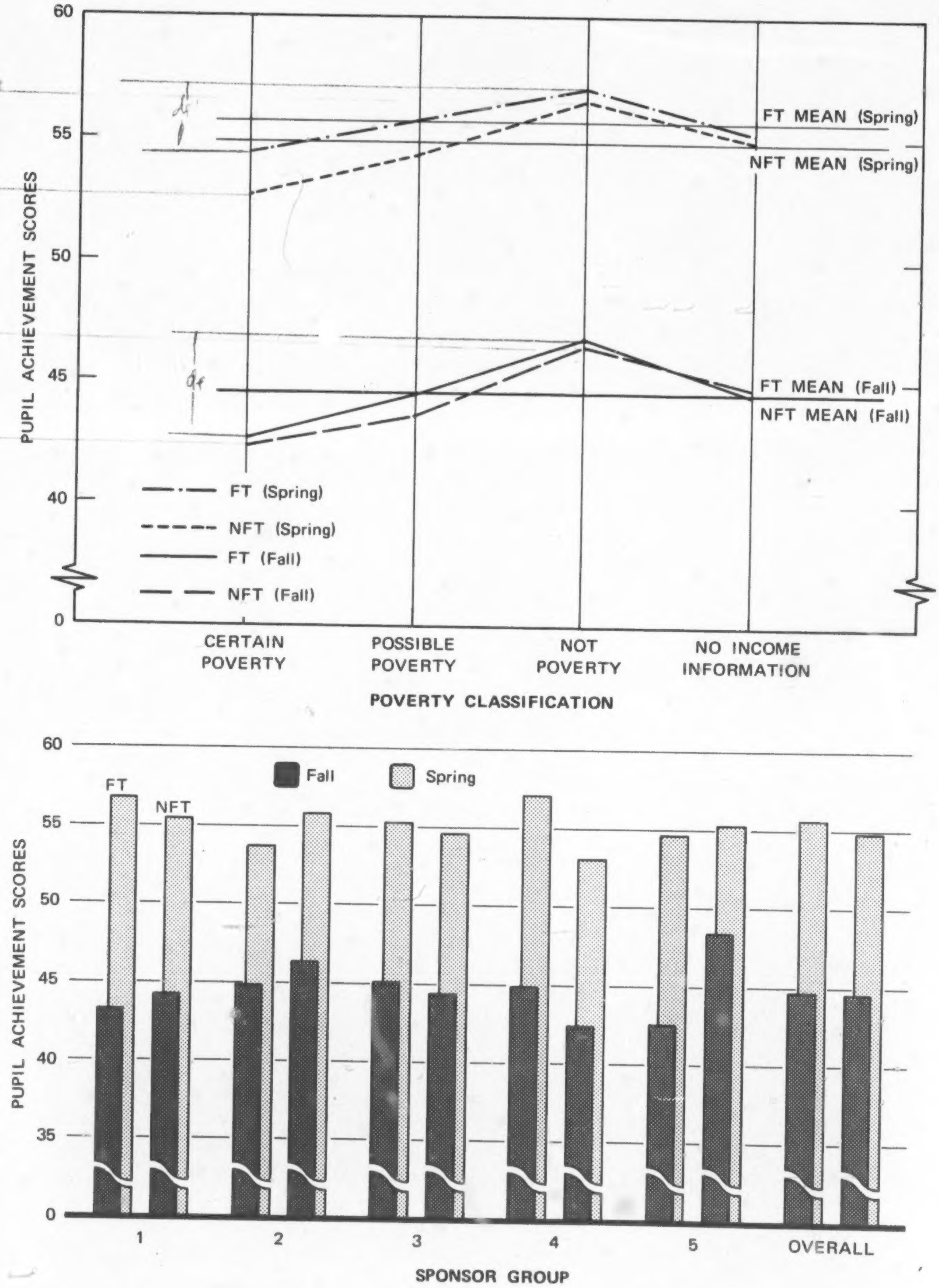

FIGURE 1 MEAN STANDARDIZED PUPIL ACHIEVEMENT SCORES FOR FOLLOW THROUGH (FT) AND NON-FOLLOW THROUGH (NFT) KINDERGARTNERS IN 18 PROJECTS

Fall nor Spring points, however, were the overall differences between Follow Through and non-Follow Through children statistically significant. Among children classified as not poor, however, the difference in gains between the Follow Through and non-Follow Through groups favored Follow Through and was statistically significant ($p < .01$).

The largest differences between Follow Through and non-Follow Through children were reflected in the performance of pupils in Sponsor Group 4. Their achievement test scores were significantly higher than non-Follow Through at the beginning of the year ($p < .001$). This difference was even greater at the Spring measurement point, which meant that the difference between Follow Through and non-Follow Through children in Fall-to-Spring gains was also statistically significant ($p < .002$). The subgroup that showed the greatest gains from Fall to Spring in Sponsor Group 4 were children classified as Certain poverty ($p < .05$).

Sponsor Group 5 was represented in the kindergarten data by only one project; the total number of children whose scores are reflected in the bar graphs in Figure 1 is less than 100. Despite this small number, the difference in achievement score means at the Fall point was statistically significant favoring non-Follow Through ($p < .002$). As the graph shows, however, Follow Through children in Sponsor Group 5 displayed substantially greater gains between the Fall and Spring points and this difference was highly significant ($p < .001$).

Attitudes Toward School--Although non-Follow Through children as a whole showed slightly more favorable attitudes toward school on the Fall measure (see Figure 2), the difference between them and Follow Through pupils was not significant. The two groups were virtually identical in the Spring. Follow Through children showed a greater shift than non-Follow Through to more positive attitudes toward school but the difference between groups in the changes were not statistically reliable.

Desirable attitudes toward school are correlated with poverty level. In the line graph, this relationship shows as a down slope but, it will be recalled, the scoring of the attitude scales was such that a lower score denoted more positive attitude. The line graph does show rather clearly that the greatest shifts to more favorable attitudes toward school were shown by children who were Certain poverty; this was true for both Follow Through and non-Follow Through children.

The bar graph displaying differences among sponsor groups appears in the bottom half of Figure 2. No significant differences were indicated between Follow Through and non-Follow Through children for Sponsor

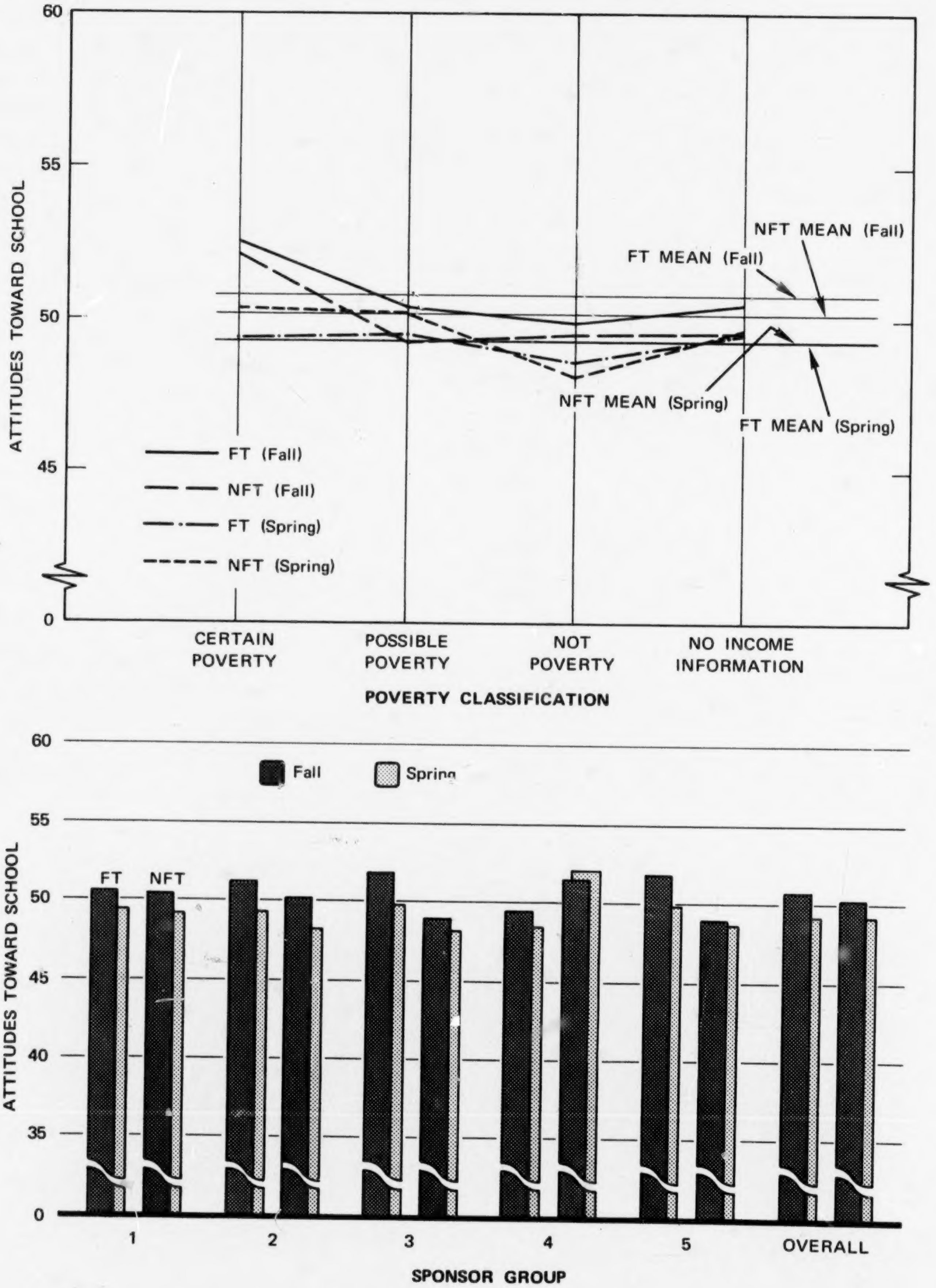

FIGURE 2 MEAN STANDARDIZED ATTITUDES TOWARD SCHOOL SCORES FOR FOLLOW THROUGH (FT) AND NON-FOLLOW THROUGH (NFT) KINDERGARTNERS IN 18 PROJECTS

Groups 1, 2, or 5. In Sponsor Group 3, both Fall and Spring measures showed non-Follow Through children reporting more positive attitudes toward school.[#] The difference at the Fall point was statistically significant ($p < .002$) and was marginally significant ($p < .10$) in the Spring. Follow Through children showed a greater shift toward more positive attitudes but the difference between them and the non-Follow Through pupils was not significant.

All the differences between Follow Through and non-Follow Through in Sponsor Group 4 favor Follow Through; more positive attitudes in the Fall ($p < .05$), more positive attitudes in the Spring ($p < .001$), and a greater shift toward more positive attitudes than non-Follow Through. In fact, as the bar graph shows, non-Follow Through children actually showed a change in the opposite direction. Despite this shift, the difference between Follow Through and non-Follow Through on their change scores was not statistically reliable.

Interpersonal Feelings--The association between poverty level and interpersonal feelings scores followed the same general pattern as that shown for the measure of attitudes toward school. This trend is clear in the line graph at the top of Figure 3. When Follow Through and non-Follow Through children are compared overall, however, none of the differences between Fall means, Spring means, or changes between Fall and Spring were statistically significant.

The sponsor groups are compared in the bar graph at the bottom of the figure. None of the contrasts between Follow Through and non-Follow Through for Sponsor Group 1 were significant. The initial scores for Sponsor Group 2 were not significantly different from one another but the Spring measure showed non-Follow Through children with somewhat more positive interpersonal feelings than Follow Through children ($p < .05$). The Fall-to-Spring shifts, however, were not significantly different from one another.

In Sponsor Group 3, the Fall scores showed non-Follow Through children with more positive interpersonal feelings than Follow Through ($p < .02$) but the comparison between Follow Through and non-Follow Through at the Spring point indicated that both groups were essentially the same. The Follow Through children showed a greater shift toward more positive feelings but this difference was not statistically reliable.

[#] As in the earlier sign tables, the lower scores indicate more positive attitudes.

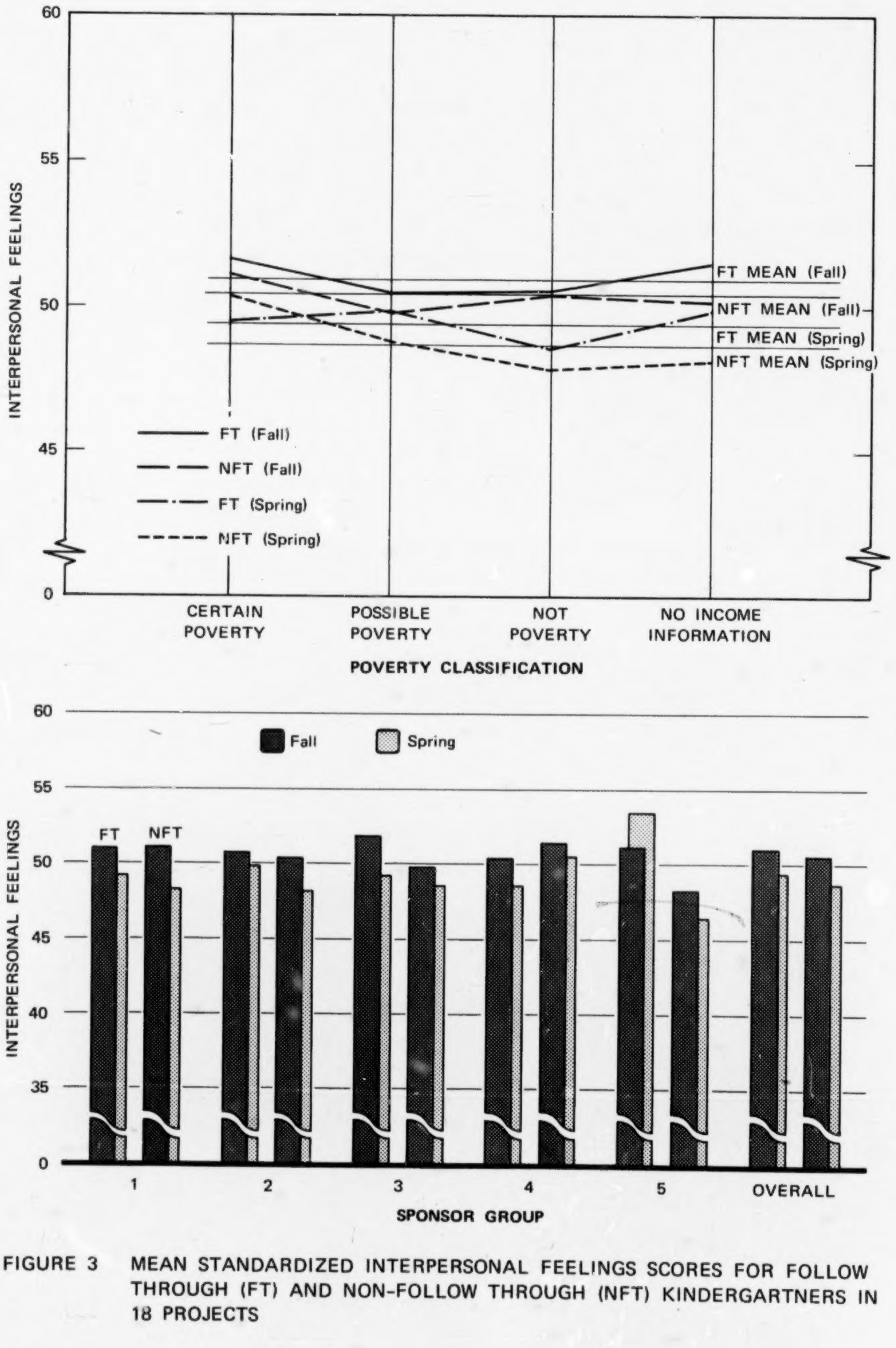

FIGURE 3 MEAN STANDARDIZED INTERPERSONAL FEELINGS SCORES FOR FOLLOW THROUGH (FT) AND NON-FOLLOW THROUGH (NFT) KINDERGARTNERS IN 18 PROJECTS

In Sponsor Group 4, all of the comparisons favored Follow Through children but only the contrast between the two groups at the Spring point was reliable ($p < .05$).

All the differences in Sponsor Group 5 favored non-Follow Through. From the bar graph it appears that the differences were substantial. Since only a small number of children were involved, however, only the difference between the two groups on the Spring measure is statistically significant ($p < .002$).

Entering First Grade

Achievement Test Performance--The entering first grade children, along with the kindergartners, constitute the groups of greatest interest in the comparisons between Follow Through and non-Follow Through during 1969-70.

The performance of entering first graders on the achievement test battery, as displayed in the graphs in Figure 4, showed a much different pattern than that displayed by the kindergartners whose performance was described above. Both the Fall and Spring comparisons between Follow Through and non-Follow Through children favored non-Follow Through and the magnitude of the difference was statistically significant at both times ($p < .001$ and $p < .002$, respectively). The Follow Through pupils, however, gained more between Fall and Spring than did the non-Follow Through children; this difference favoring Follow Through was statistically significant ($p < .002$). It was in the Certain poverty category that the largest difference favoring Follow Through occurred in the gains from Fall to Spring.

The line graph at the top of Figure 4 shows the same positive correlation between poverty and school achievement as that reflected by kindergartners. Beyond that association, the most notable feature of the line graph is the initial wide difference between the Follow Through and non-Follow Through groups in all poverty categories. Difficulties in achieving ideal matches between Follow Through and non-Follow Through groups in the project locations from which these children came have been mentioned before. It is worth recalling that most of the school districts in the Follow Through experiment that do not have kindergartens as part of the regular school (i.e., first grade is the entering year in Follow Through) are in the South. Of the nine projects represented in Figure 4, seven are in the deep South, one in a mid-Atlantic state, and one in Appalachia. Only two of the nine would be considered urban. It was characteristic to experience difficulty in such locations in finding

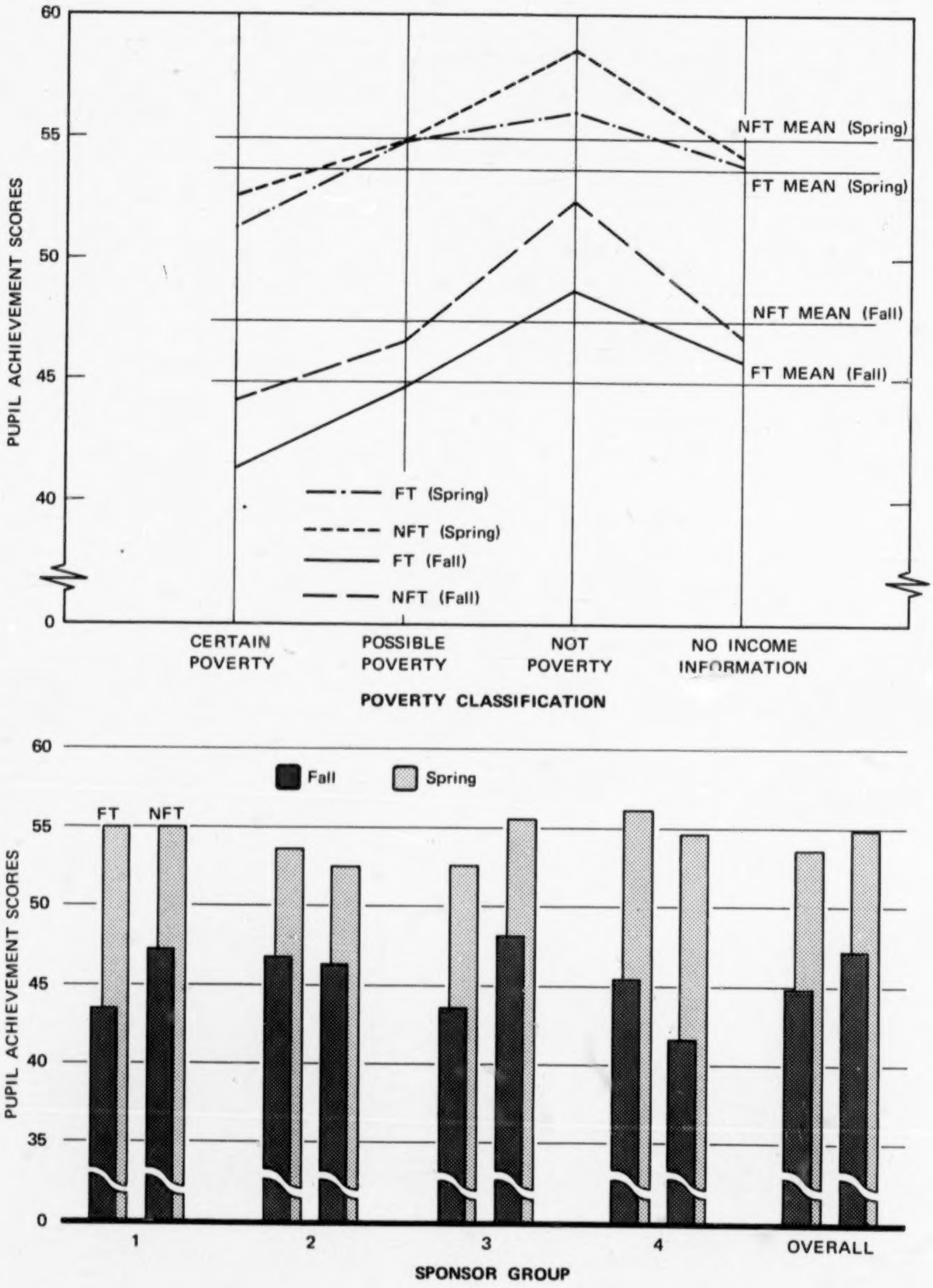

FIGURE 4 MEAN STANDARDIZED PUPIL ACHIEVEMENT SCORES FOR FOLLOW THROUGH (FT) AND NON-FOLLOW THROUGH (NFT) ENTERING FIRST GRADERS IN 9 PROJECTS

non-Follow Through comparison schools and classes with similar socio-economic and ethnic characteristics.

The bar graph in **Figure 4** compares the performance of Follow Through and non-Follow Through children according to four sponsor groups. Each of the four displayed a different pattern of contrast between Follow Through and non-Follow Through. In Sponsor Group 1, the Follow Through children began the year at a level markedly below their non-Follow Through comparisons ($p < .002$). By Spring, however, these measured differences had disappeared. The Follow Through group gained substantially more than the non-Follow Through group ($p < .001$).

The Follow Through children in Sponsor Group 2 began the 1969-70 year somewhat ahead of the non-Follow Through children and increased this difference slightly. None of the differences (Fall, Spring, or gain) were statistically significant, however. In Sponsor Group 3, Follow Through children began and ended the year at levels considerably below the non-Follow Through children ($p < .001$ in both comparisons). The Follow Through children, however, gained significantly more between Fall and Spring ($p < .01$).

The bar graph implies marked differences between Follow Through and non-Follow Through in Sponsor Group 4. Only a small number of children were included here, however, since this sponsor group is represented by only one project in the entering first grade. Thus, the differences, although apparently large in the graphic display, are not statistically significant.

Attitudes Toward School--As was the case with kindergartners, entering first graders also showed the characteristic correlation between attitudes toward school and poverty; this is reflected in the down slopes from Certain poverty to Not poverty in the line graph of Figure 5.* Non-Follow Through children as a whole revealed somewhat more favorable attitudes toward school at the beginning of the year ($p < .05$) but the difference by Spring between the two groups was not significant. The overall difference between Follow Through and non-Follow Through in a shift toward more positive attitudes favored Follow Through but not significantly so. However, the Follow Through children classified as Certain poverty did show significantly greater positive shifts than non-Follow Through children in the same poverty classification ($p < .05$).

---

* As stated earlier, a lower score on the scale of attitude toward school means a better attitude.

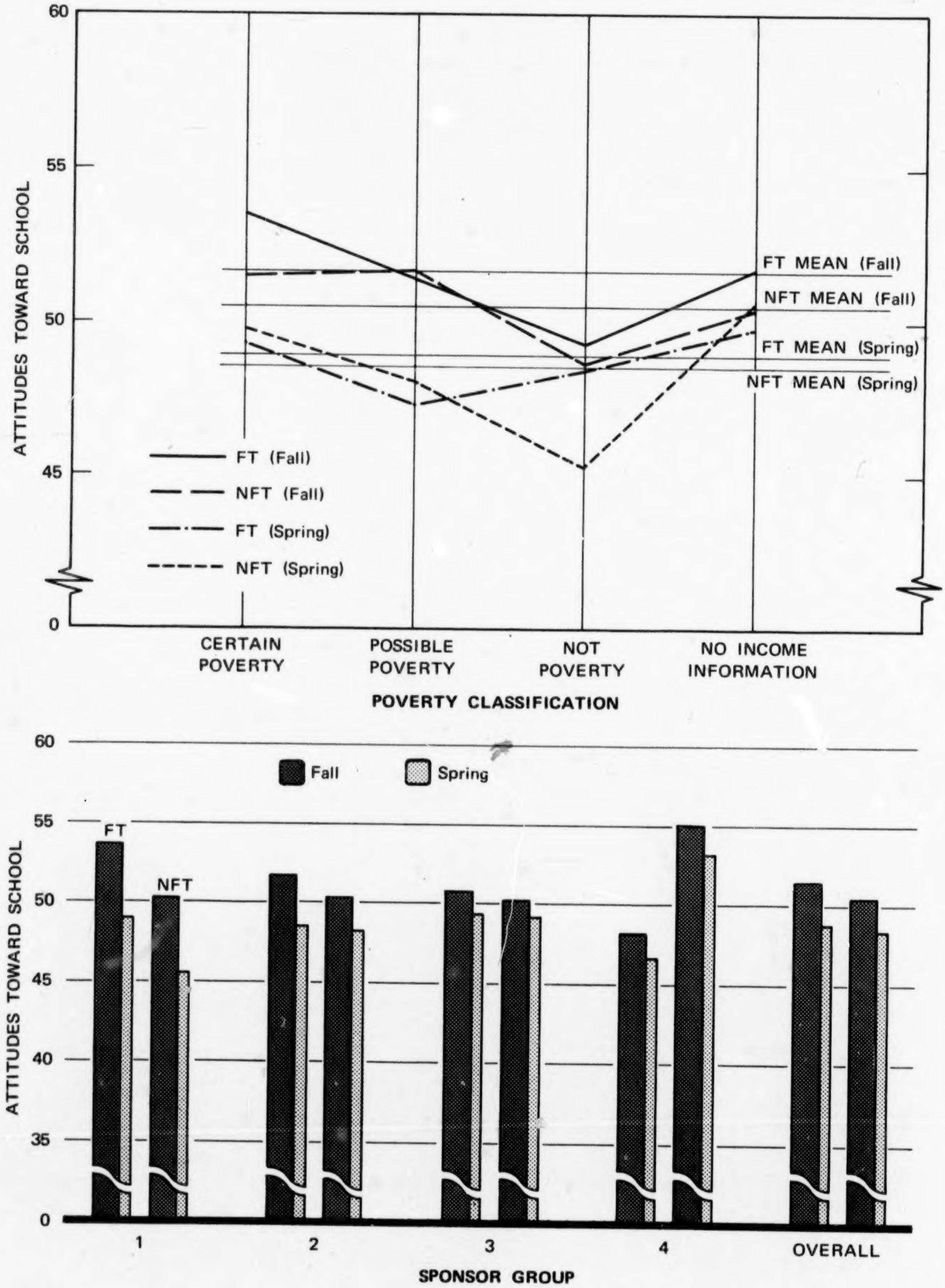

FIGURE 5 MEAN STANDARDIZED ATTITUDES TOWARD SCHOOL SCORES FOR FOLLOW THROUGH (FT) AND NON-FOLLOW THROUGH (NFT) ENTERING FIRST GRADERS IN 9 PROJECTS

As the bar graph in Figure 5 illustrates, Follow Through children in Sponsor Group 1 revealed less favorable attitudes toward school than did non-Follow Through children on both the Fall and Spring measures. Both these differences were statistically significant ($p < .01$ and $p < .005$). The shift toward more positive attitudes from Fall to Spring actually favored Follow Through slightly but the difference was not significant. In both Sponsor Groups 2 and 3, none of the differences between Follow Through and non-Follow Through on Fall, Spring, or gain measures were significant.

In Sponsor Group 4, both the Fall and Spring measures showed Follow Through children with more positive attitudes toward school ($p < .01$ in both cases) but both groups showed essentially equal shifts between Fall and Spring.

Interpersonal Feelings--The measure of interpersonal feelings, as a function of poverty level, demonstrated an association very similar to that displayed by the previous attitude measure, as indicated in the line graph at the top of Figure 6. As a whole, non-Follow Through children showed more positive (i.e., they had lower scores on the scale used) interpersonal feelings than Follow Through children on both the Fall and Spring measures; only the Fall difference, however, was clearly significant ($p < .005$). The difference between the two groups in the gains shown between Fall and Spring were not significant although they favored Follow Through.

The differences between Follow Through and non-Follow Through according to sponsor groupings appear in the bar graph at the bottom of Figure 6. The pattern over the first three sponsor groups was similar but not quite identical to that reflected in the attitudes toward school measure. All of the differences between Follow Through and non-Follow Through in Sponsor Group 1 favored non-Follow Through children. The difference in the Spring measure was significant ($p < .005$) and the difference between the two groups in the Fall-to-Spring shift approached significance ($p < .10$).

The positive changes of greatest magnitude favoring Follow Through were evinced by Sponsor Group 2. Although non-Follow Through children showed more positive interpersonal feelings in the Fall measure than did Follow Through, the relative positions were reversed in the Spring measure; this difference favoring Follow Through in the Fall-to-Spring shift was reliable ($p < .05$).

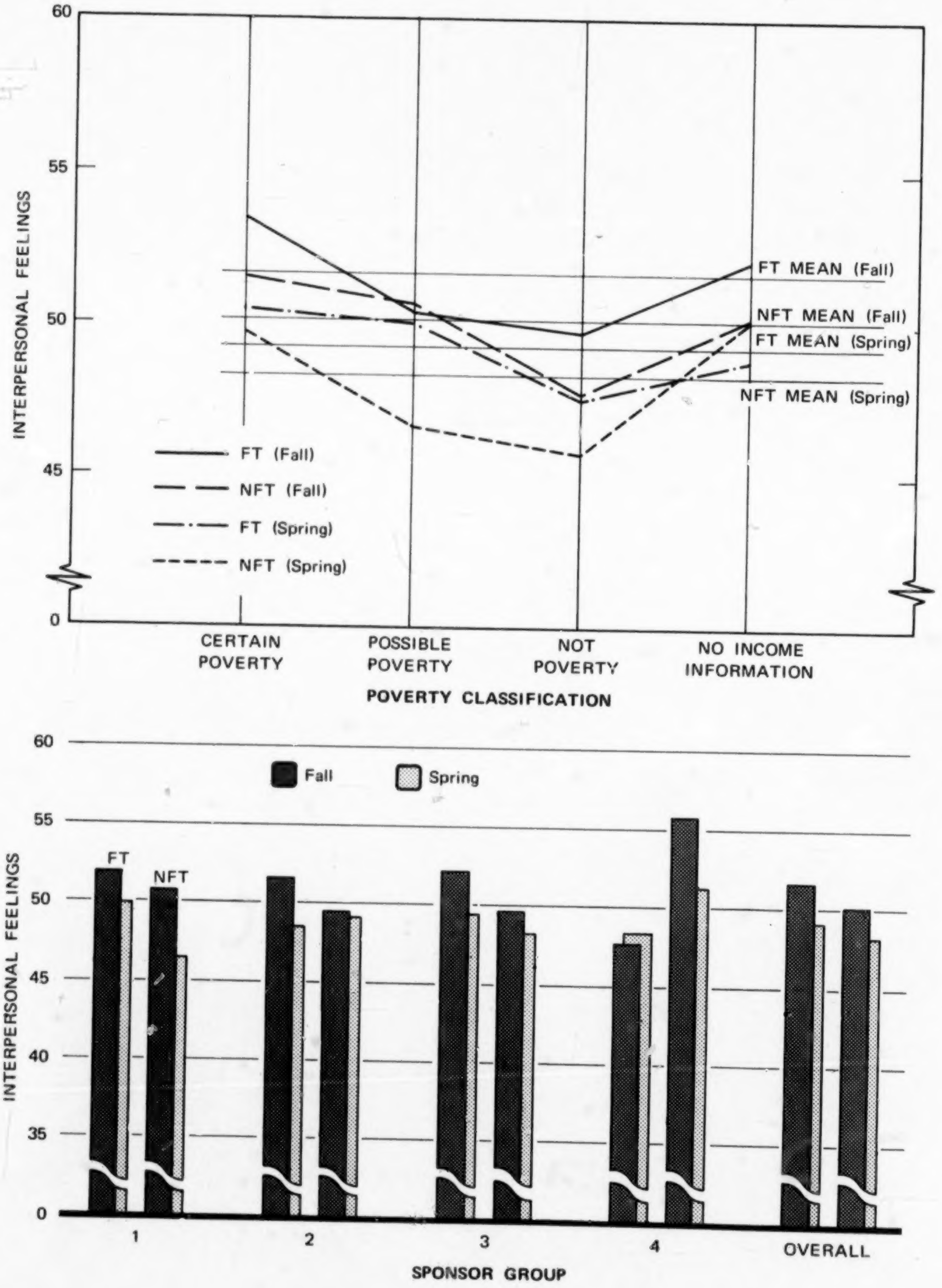

FIGURE 6 MEAN STANDARDIZED INTERPERSONAL FEELINGS SCORES FOR FOLLOW THROUGH (FT) AND NON-FOLLOW THROUGH (NFT) ENTERING FIRST GRADERS IN 9 PROJECTS

In Sponsor Group 3, non-Follow Through children reflected more favorable interpersonal feelings than did Follow Through on both the Fall and Spring measures, but only the initial (Fall) difference was significant ($p < .002$). The difference between the two groups in the change from Fall to Spring favored Follow Through but was not statistically significant.

Essentially the reverse of the foregoing pattern was shown in Sponsor Group 4 in which Follow Through pupils showed more favorable interpersonal feelings than non-Follow Through at both Fall and Spring measurement points. The Fall difference was significant ($p < .005$) but the Spring difference was not. Despite the reversal in pattern for the Follow Through group, as revealed in the bar graph, the differences between Follow Through and non-Follow Through on the Fall-to-Spring change was not statistically significant. It will be recalled that only one project represents Sponsor Group 4 at this grade level, thus accounting for the fact that apparently large differences are not statistically reliable.

Non-Entering First Grade, and Second Grade

Children at the non-entering grade levels in 1969-70--the 1968-69 kindergartners, first, and second graders--were not represented heavily in the evaluation sample during 1969-70. Further, these children were all forerunners of the first cohort group of children who entered Follow Through in Fall 1969 and who, therefore, are considered the first group whose longitudinal growth and development represents a fair assessment of the effectiveness of established Follow Through programs.

Figures 7 through 9 display the performance of non-entering first graders on the achievement, attitudes toward schools, and interpersonal feelings measures and Figures 10 through 12 show similar data for second graders. One new poverty classification appears in the line graphs in Figures 10 through 12 for second graders. The points defined by the category labeled "Unknown" represent children in projects in which no parent interviews whatever were conducted. Children whose scores are reflected in the category "No Income Information," in contrast, were children from projects in which some interviews were conducted with parents of second graders but whose own parents were not included in the interview sample. As the line graphs show, these two groups--"No Income Information" and "Unknown"--are similar to one another, as would be expected.

Apart from the addition of the "Unknown" category, all these figures may be read in a manner similar to the foregoing descriptions for kindergarten and entering first grade. Each of these figures is supported by

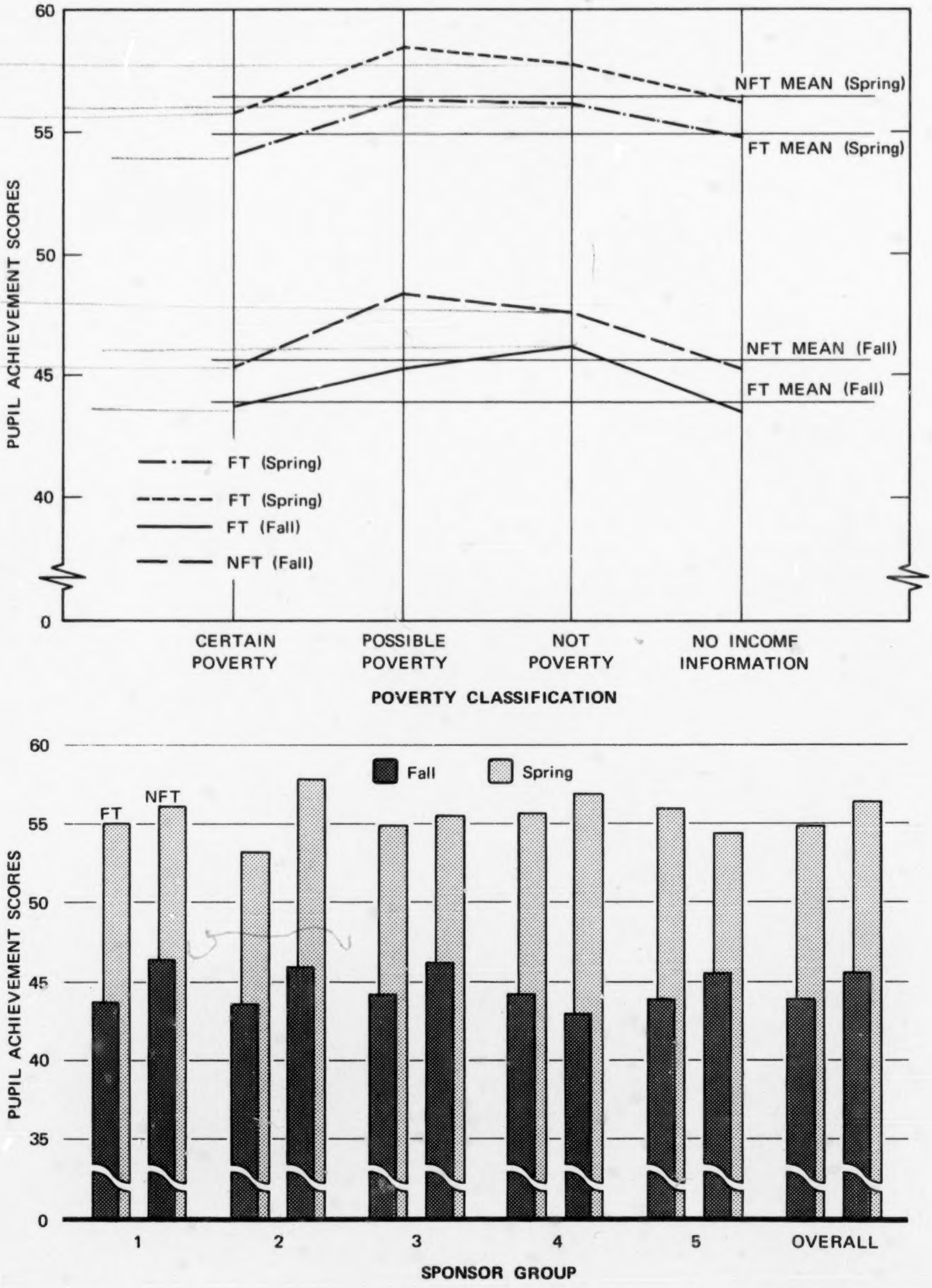

FIGURE 7 MEAN STANDARDIZED PUPIL ACHIEVEMENT SCORES FOR FOLLOW THROUGH (FT) AND NON-FOLLOW THROUGH (NFT) NON-ENTERING FIRST GRADERS IN 21 PROJECTS

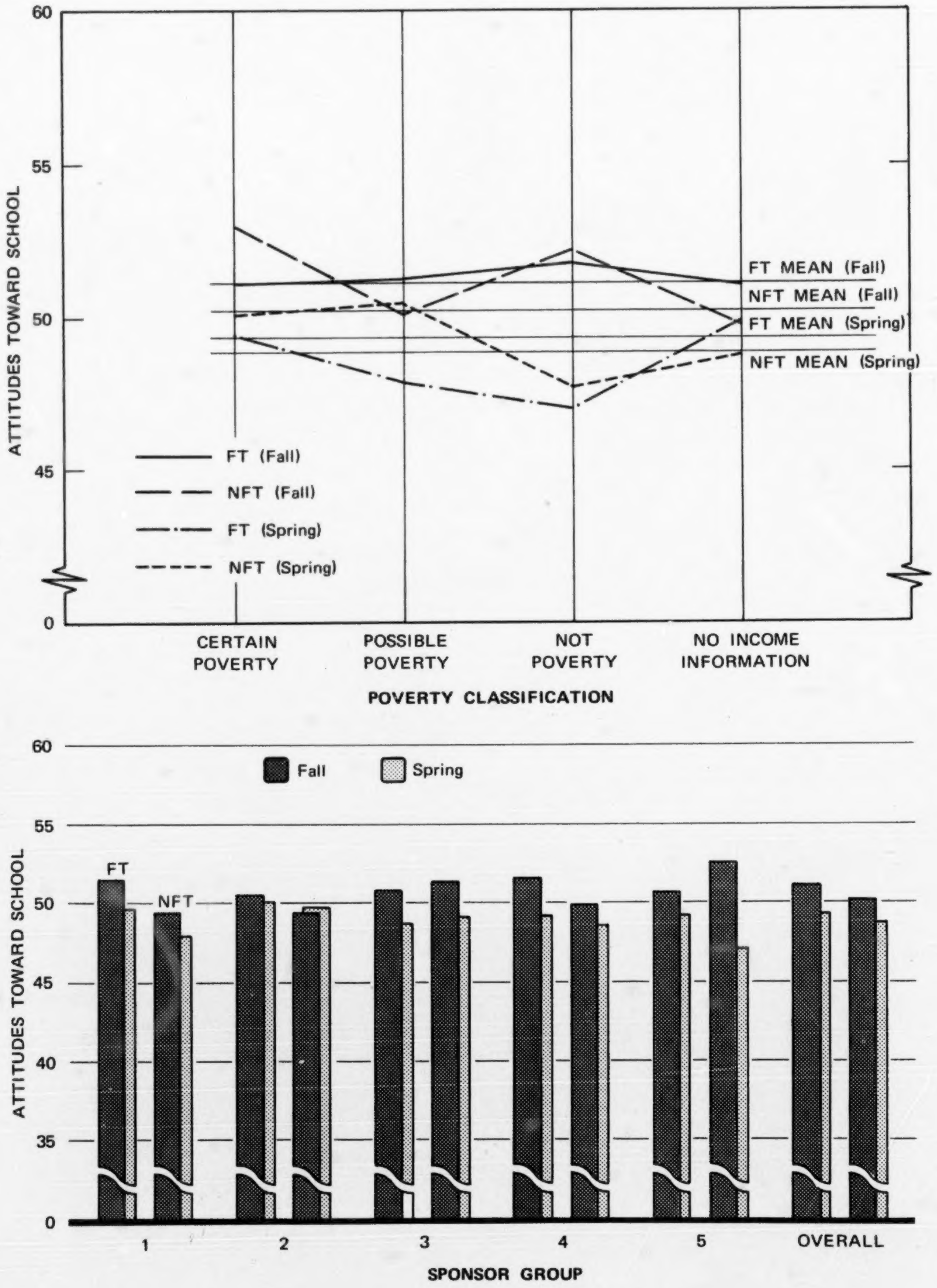

FIGURE 8 MEAN STANDARDIZED ATTITUDES TOWARD SCHOOL SCORES FOR FOLLOW THROUGH (FT) AND NON-FOLLOW THROUGH (NFT) NON-ENTERING FIRST GRADERS IN 21 PROJECTS

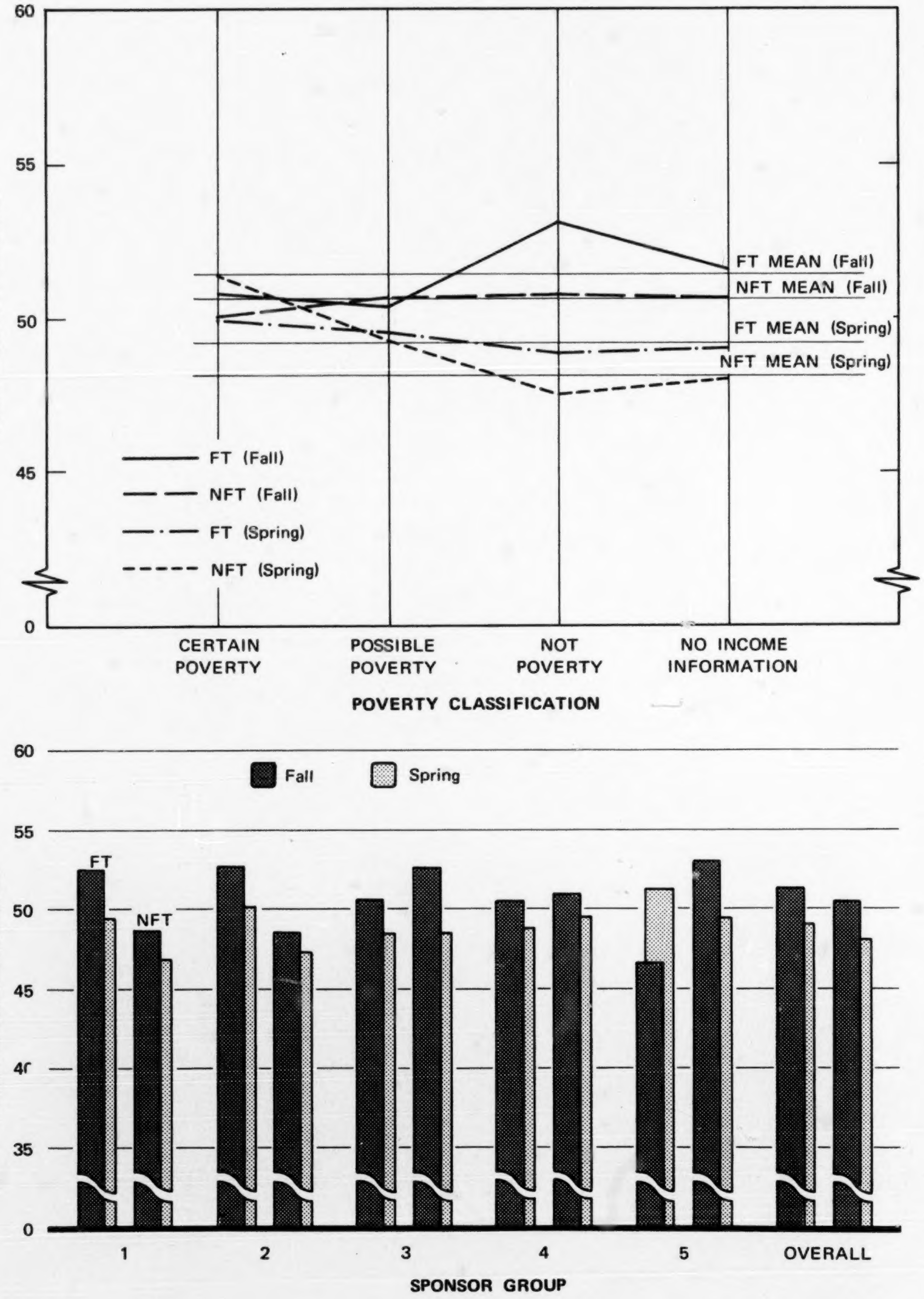

FIGURE 9 MEAN STANDARDIZED INTERPERSONAL FEELINGS SCORES FOR FOLLOW THROUGH (FT) AND NON-FOLLOW THROUGH (NFT) NON-ENTERING FIRST GRADERS IN 21 PROJECTS

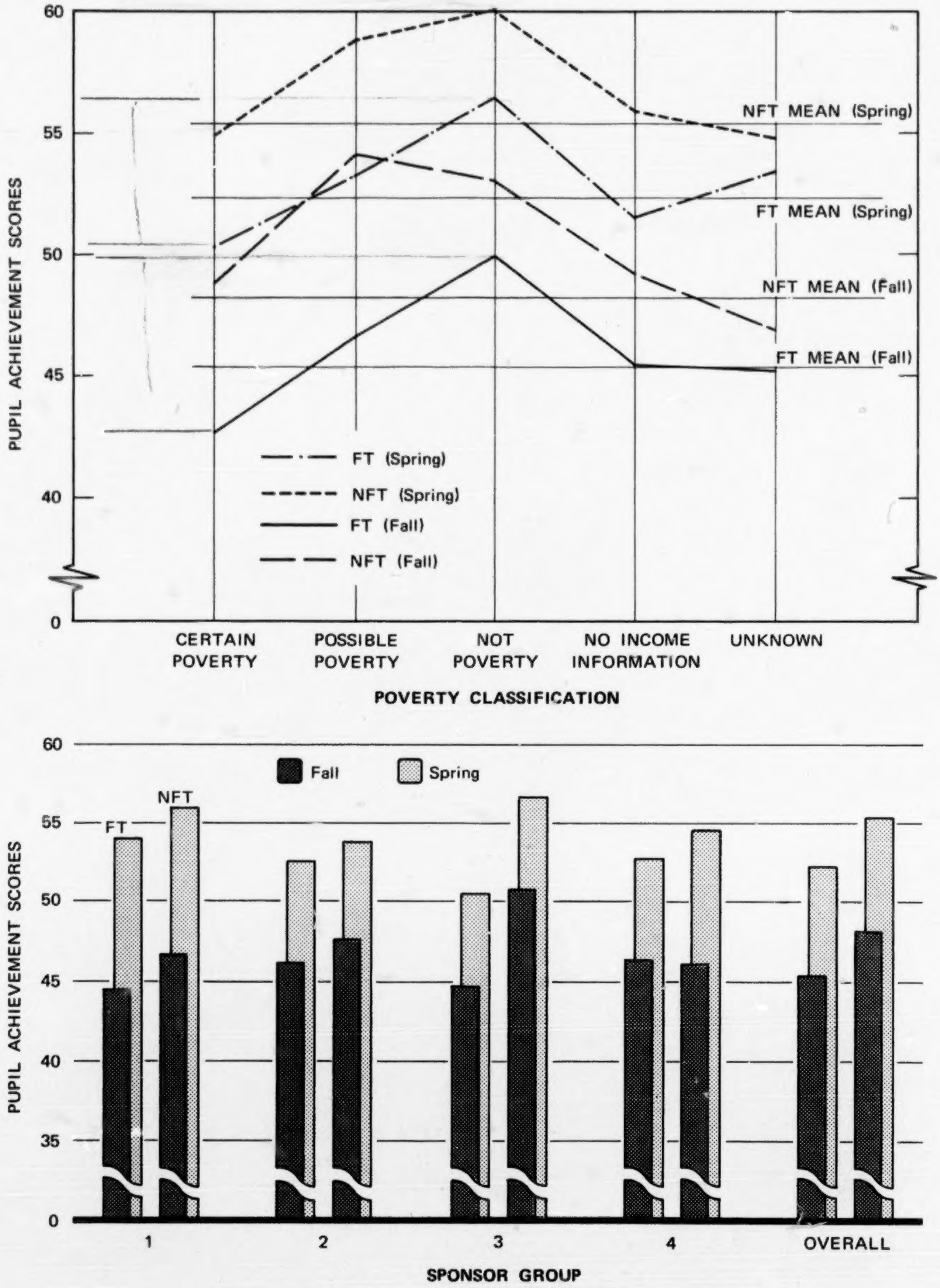

FIGURE 10 MEAN STANDARDIZED PUPIL ACHIEVEMENT SCORES FOR FOLLOW THROUGH (FT) AND NON-FOLLOW THROUGH (NFT) SECOND GRADERS IN 19 PROJECTS

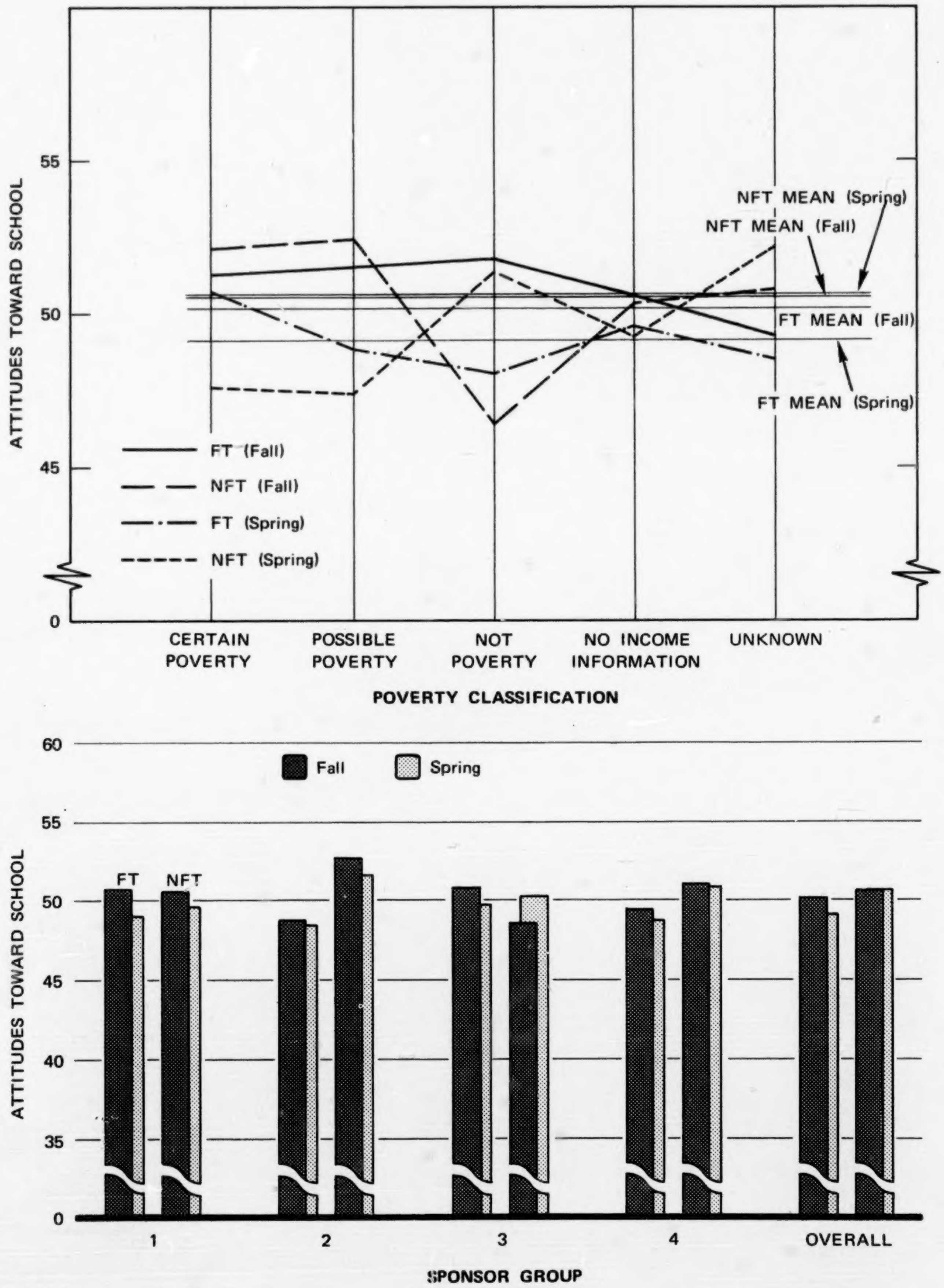

FIGURE 11 MEAN STANDARDIZED ATTITUDES TOWARD SCHOOL SCORES FOR FOLLOW THROUGH (FT) AND NON-FOLLOW THROUGH (NFT) SECOND GRADERS IN 19 PROJECTS

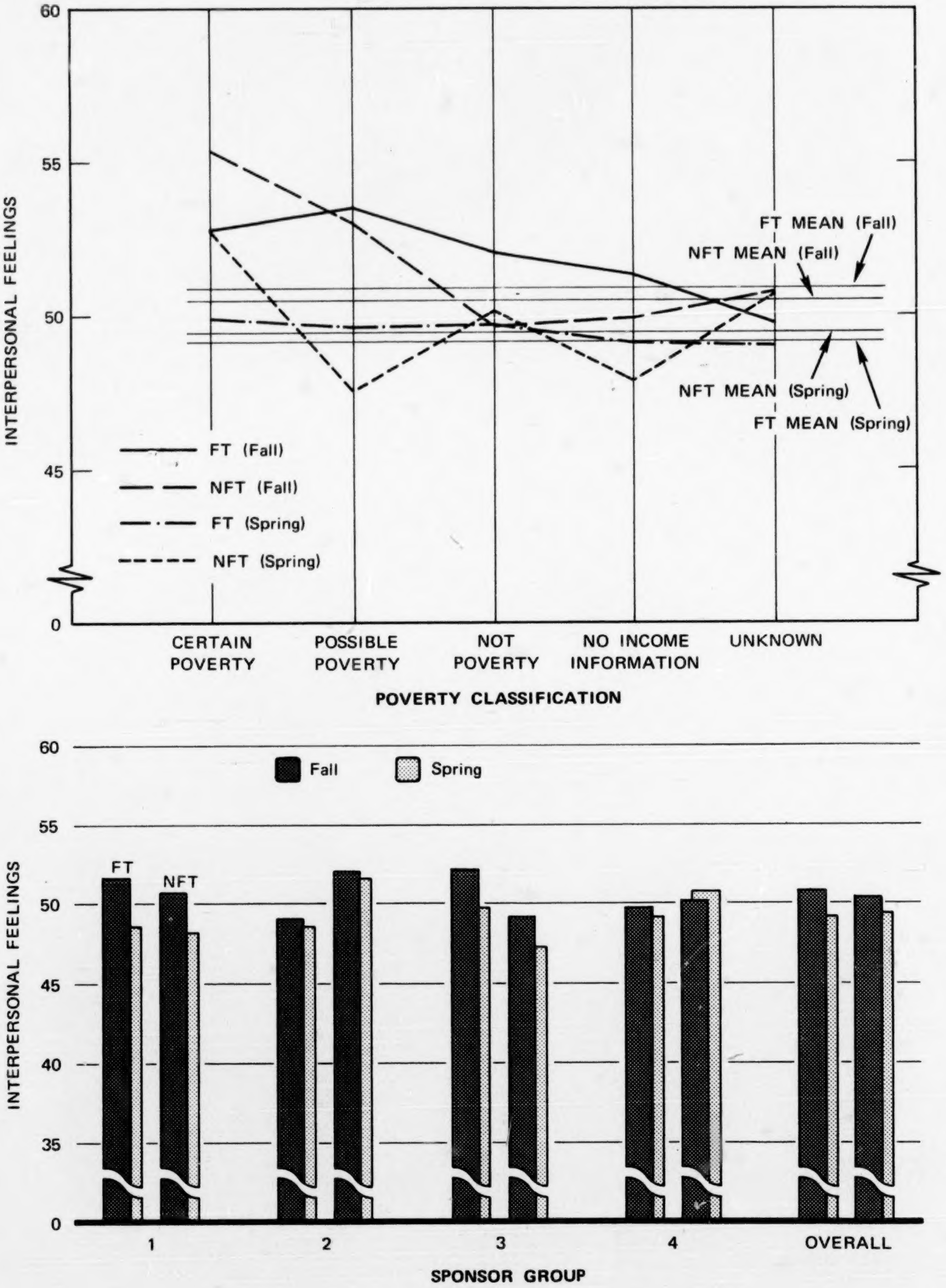

FIGURE 12 MEAN STANDARDIZED INTERPERSONAL FEELINGS SCORES FOR FOLLOW THROUGH (FT) AND NON-FOLLOW THROUGH (NFT) SECOND GRADERS IN 19 PROJECTS

detailed tables in Appendix A from which one may obtain an indication of the statistical significance of any of the observed differences between Follow Through and non-Follow Through. For these two reasons--(1) the lesser importance of children at these grade levels for the longitudinal evaluation and (2) the fact that detailed tables may be referred to for questions regarding group sizes and the significance of differences--no detailed narrative description of these figures has been provided.

Very briefly, the data at non-entering first grade on the achievement measure show that Fall and Spring scores favor non-Follow Through children at all poverty levels and in nearly all of the sponsor groups. Fall-to-Spring gains favor the Follow Through children significantly in Sponsor Group 1 ($p < .005$), Sponsor Group 3 ($p < .001$, and Sponsor Group 5 ($p < .05$). In Sponsor Groups 2 and 4, however, the pattern is reversed and the differences favor non-Follow Through ($p < .001$ in both instances). The attitudes and interpersonal feelings measures at non-entering first grade in general show no differences of consequence between Follow Through and non-Follow Through.

At the second grade level, again, the overall differences at both Fall and Spring favor non-Follow Through and significantly so. In Sponsor Group 1 and to a lesser extent in Sponsor Group 2, the Fall-to-Spring gains favor Follow Through and are statistically reliable ($p < .05$). As the bar graphs indicate, however, all of the Spring score comparisons show non-Follow Through children with higher average scores than Follow Through.

Follow Through second graders as a whole showed significantly larger shifts to more positive attitudes toward school than did non-Follow Through children ($p < .05$). When sponsor groups are contrasted, the patterns may be seen to vary. The sponsor group with the largest difference favoring Follow Through on this attitude measure is Sponsor Group 2.

The measure of interpersonal feelings did not reveal a significant difference between Follow Through and non-Follow Through children overall. However, Sponsor Group 2, as in the measure of attitudes toward school, displayed the largest difference between the two groups that favored Follow Through. Sponsor Group 3 had approximately equal differences favoring non-Follow Through.

Non-Cognitive Measures

The rationale for a systematic examination of a number of procedures for measuring non-cognitive variables was presented in Section III of this report, with additional details in Appendix 5.

Briefly, the pilot study conducted in eight project locations in Spring 1970 sought to identify relationships among several indices of non-cognitive growth that were thought to reflect development objectives in several of the Follow Through models. In all, some 850 children from kindergarten through third grade participated in the pilot study. The project locations selected included three from Sponsor Group 1, two from Sponsor Group 2, two from Sponsor Group 3, and one from Sponsor Group 4. Within the limits of this restricted judgmental sample, it is possible to display a non-cognitive profile for each of these four sponsor groups. Obviously, these profiles must be viewed as suggestive only since the numbers of children were small and the projects included are not all considered exemplars of the model they employ.

Variables

The results reported below include nine variables. Measures on all variables were obtained for second and third grade pupils in all eight projects and measures on four were obtained for pupils at kindergarten and first grade. The non-cognitive variables are as follows:

(1) School Fearfulness. Five subscores were employed that have been combined into this one variable. The five, all derived from the Test Anxiety Scale for Children, were conceptualized as evaluation anxiety (fear of school tests), remote school concern (fear of school when not in attendance), poor self-evaluation (fear of academic incompetence), somatic signs of anxiety (e.g., trembling hands), and a residual set of all remaining items in the Scale.

(2) Ethnic Identity. An ethnic pictures test was used to measure ethnic identity; e.g., feelings of pride, worth, attractiveness, and efficacy associated with membership in a particular ethnic group. Six subscores (self-image, affectiveness, prowess, identification, school orientation, and teacher orientation) have been combined into this single index.

(3) & (4) Locus of Control. The Intellectual Achievement Responsibility scale was used to measure the degree to which a pupil feels responsible for his own academic success and failure. The "Success" and "Failure" scores appear separately in the profile.

(5) Intrinsic Motivation. The Picture Motivation Scale assessed a pupil's position on a theoretical continuum extending from intrinsic to extrinsic sources of motivation. Intrinsic motivation is characterized by achievement, mastery, creativity, enjoyment, responsibility, aesthetic interest, and psychological stimulation. At the other end of the scale, sources of extrinsic motivation include money, ease, safety, comfort, and general environmental security.

(6) Attitudes Toward School. A longer and more comprehensive measure of attitudes toward school than the one used for the large samples of pupils reported earlier was obtained from a paper-and-pencil scale in which the children responded to such items as: "I ask the teacher a question if I need help," "I like doing my school work," "I work on things by myself," "I like to stand before the class and tell a story."

(7) Teacher Ratings of Pupil Behavior. A 27-item rating scale adapted from the Classroom Behavior Inventory was completed by teachers on a randomly selected half of the children from each classroom in the non-cognitive sample. Items in the rating scale included attitudes toward school, task orientation, curiosity, autonomy, self-esteem, locus of control, evaluation anxiety, and so on. The summary score results reflect the extent to which the teacher judged that a pupil's behavior is adaptive to learning in the classroom.

(8) & (9) Puzzle Task Competence and Anxiety. These two scales were both obtained through observation of children's behavior in structured puzzle-solving situations. The observation protocols represented observers' judgments of the extent to which the pupil relied on himself, was competent in solving visual-motor problems, persisted to solution, exhibited caution, depended on external cues, and so on.

Results

A series of tables (A-110 through A-118) appearing in Appendix A show the scores for Follow Through and non-Follow Through children according to sponsor groupings for each of the nine variables described above. The scores are presented in standard score form; the same logic and procedures for standard score representation applied here as have been described earlier for achievement measures: briefly, Follow Through and non-Follow Through pupil scores in each project location separately were aggregated into a single distribution for the location or project whose mean was set equal to 50 with a standard deviation of 10. The Follow Through and non-Follow Through scores were then disaggregated, and separate Follow Through and non-Follow Through means and standard deviations were computed on the transformed scores. Because of the standardization, it is not possible to compare one sponsor group to another according to Follow Through or non-Follow Through means. It is possible, however, to contrast the differences between Follow Through and non-Follow Through means across sponsor groupings.

Table 26 summarizes the differences between Follow Through and non-Follow Through pupils within sponsor groups according to grade level for each of the gross non-cognitive variables described above. Table 26 contains only signs; plus (+) denotes that Follow Through mean scores exceeded non-Follow Through mean scores and minus (-) denotes the reverse. It should be emphasized that the signs show the quantitative difference in the score values so that plus (+) and minus (-) cannot be interpreted as "good" and "bad" or "better" and "worse." The scoring of all non-cognitive variables was such that a high score denotes a greater amount or degree of the trait. On two of the measures--school fearfulness and task anxiety--a negative difference between Follow Through and non-Follow Through, shown by a minus (-) sign, would mean lower scores on the fearfulness or anxiety measures by Follow Through pupils than by non-Follow Through pupils. In a valuational sense, most persons probably would judge such differences to be desirable.

School Fearfulness--The Test Anxiety Scale for Children was administered to groups of children at second and third grades in all four sponsor groups. The details appear in Table A-110 of Appendix A. In all comparisons, the mean scores for Follow Through children were lower than those for non-Follow Through children, thus indicating less apprehension about evaluation situations in school. In two of the four sponsor groups, the difference between Follow Through and non-Follow Through was clearly significant and, in a third, the difference approached statistical significance. The greatest difference was in Sponsor Group 4

Table 26

NON-COGNITIVE MEASUREMENT PROFILE FOR A JUDGMENTAL SAMPLE OF PROJECTS REFLECTING FOUR SPONSOR GROUPS

Variable	School Grade	Sponsor Groups 1	2	3	4	Total
School fearfulness	Second and third grades	-	$-^{*}$	-	$-^{\dagger}$	$-^{\dagger}$
Ethnic identity	Kindergarten and first grades	-	+			+
	Second and third grades	-	+	+	+	+
Locus of control	Second and third grades					
Success		+	-	-	-	-
Failure		$-^{*}$	+	-	$-^{\dagger}$	$-^{*}$
Intrinsic motivation	Second and third grades	$+^{\dagger}$	+	$+^{*}$	+	$+^{\dagger}$
Attitudes toward school	Second and third grades	$-^{*}$	-	-	+	-
Teacher ratings	Kindergarten and first grades	-	+			-
	Second and third grades	+	+	+	+	$+^{*}$
Puzzle task						
Competence	Kindergarten and first grades	+	$+^{\dagger}$			$+^{*}$
	Second and third grades	-	+	+	+	+
Anxiety	Kindergarten and first grades	-	-			-
	Second and third grades	-	-	-	$-^{*}$	$-^{\dagger}$

Note: Plus (+) signs denote that Follow Through mean scores exceeded non-Follow Through mean scores and minus (-) signs denote the reverse. On all variables, a higher score reflects more of the trait. For example, the negative or minus (-) signs on the "school fearfulness" measure mean lower "school fearfulness" scores for Follow Through than non-Follow Through. See Tables A-110 through A-118 in Appendix A for detailed summaries.

* $p < .05$

† $p < .01$.

($p < .005$), followed by Sponsor Group 2 ($p < .05$), and Sponsor Group 1 ($p < .10$). The difference over all groups combined was significant ($p < .001$). On the basis of this judgmental sample of pupils, therefore, it appears that Follow Through children, regardless of the instructional approach they experience, are likely to be somewhat less anxious in evaluation situations than are non-Follow Through children.

Ethnic Identity--Randomly selected samples of children at all grade levels from kindergarten through three were given the ethnic pictures test. The details of these findings appear in Table A-111 in Appendix A. None of the comparisons between Follow Through and non-Follow Through children in any of the sponsor groupings at any grade level showed clear differences favoring either Follow Through or non-Follow Through. Follow Through children produced higher scores than non-Follow Through children at all grade levels in Sponsor Groups 2, 3, and 4 but the only differences to approach statistical significance ($p < .10$) were in kindergarten and first grade in Sponsor Group 2. In Sponsor Group 1 the mean differences favored non-Follow Through but the differences were small and not statistically significant. The differences between Follow Through and non-Follow Through over all sponsor groups combined were also not statistically significant. In considering this finding, it is important to remember that the standardized score representations show differences between Follow Through and non-Follow Through children and do not show the intensity of identification that the responses may imply.

Locus of Control: Success and Failure--The Intellectual Achievement Responsibility scale yielded two subscores denoting the degree of internality for locus of control. Half the items on the scale concerned responsibility for academic success while the other half dealt with responsibility for academic failure. Thus, a pupil's scores on the Success and Failure subscales reflected the degree to which he felt responsible for either outcome. This test was administered only to second and third grades. The detailed scores for success are shown in Table A-112 and for failure in Table A-113 of Appendix A.

Contrasts among sponsor groupings on these two scales showed some intersponsor differences as Table 26 reveals. Only Sponsor Group 1 produced differences favoring Follow Through on the responsibility for success measure. The difference between Follow Through and non-Follow Through within Sponsor Group 1 was not statistically significant, however. For Sponsor Groups 2, 3, and 4 the direction of difference favored non-Follow Through. For Sponsor Groups 2 and 3, the differences were trivial.

For Sponsor Group 4, the difference was large enough to approach statistical significance ($p < .10$). Over all sponsor groups combined the difference, while favoring non-Follow Through, was not significant.

The responsibility for failure subscale produced some statistically significant differences, whereas the responsibility for success scale did not. In both Sponsor Group 1 and Sponsor Group 4 the differences between Follow Through and non-Follow Through favored non-Follow Through and were statistically significant ($p < .05$ and $p < .01$, respectively). The difference in Sponsor Group 3 also favored non-Follow Through but was not significant. In Sponsor Group 2, however, higher scores were obtained from Follow Through pupils than from non-Follow Through pupils but the size of the difference was too small to be considered significant.

The speculation of greatest interest that arises out of these two sets of scores comes from the contrast in patterns between Sponsor Group 1 and Sponsor Group 2 since these two groups are the ones that tend to be most systematically different from one another in their approaches. At least two interpretations may be suggested, both of which are conjectural. On the one hand, the data suggest that a central conviction of the approaches combined in Sponsor Group 1 is being transmitted to pupils through the medium of teachers. The theory holds that, since all organisms can learn, the "fault" for learning difficulties resides more in weaknesses in approach or instructional materials than in the learner. If this conviction has been transmitted strongly to the teachers, it may be transmitted as well to the pupils and reflected in their response patterns. By this argument it would not be inappropriate for pupils in Sponsor Group 1 to feel responsible for their achievement successes since they are rewarded for them. Similarly, it would not be inappropriate for them to not feel responsible for failure if teachers have communicated to the children that difficulties in learning were not so much their fault as the fault of the approach the teachers have used.

A somewhat contrary interpretation of the data might argue that the children in Sponsor Group 2 have approached a balanced recognition and acceptance of responsibility for both their success and failure and that such a balance is a positive indication of realistic self-appraisal. On both the responsibility for success and responsibility for failure scales, the children in Sponsor Group 2 are very close to the neutral point (i.e., no difference between Follow Through and non-Follow Through); they are closer to this neutral point than are the children in any of the other sponsor groups. The validity of this argument rests in part on the extent to which one is willing to accept the behavior of non-Follow Through children as the criterion of reference. It is also appropriate to reemphasize that these viewpoints are conjectural for the reasons already cited.

Intrinsic Motivation--The Picture Motivation Scale, used with second and third graders, sought to estimate a pupil's position on a theoretical continuum extending from intrinsic to extrinsic sources of motivation. It is notable from Table A- in Appendix A and from Table 26 above that the Follow Through pupils in all sponsor groups scored higher on intrinsic motivation than sis non-Follow Through pupils.

A somewhat unexpected finding was that the largest difference within a sponsor group occurred in Sponsor Group 1, since the approaches in this group make the greatest use of systematic reinforcements in their instructional models. This difference between Follow Through and non-Follow Through in Sponsor Group 1 was clearly significant ($p < .001$). A similar but smaller difference was observed in Sponsor Group 3 ($p < .025$). In mildly surprising contrast, Follow Through children in Sponsor Group 2, which emphasizes such child-centered and humanistic values as curiosity and autonomy, showed only small differences between Follow Through and non-Follow Through ($p > .50$).

Attitudes Toward School--A paper-and-pencil scale called In My Classroom was administered to second and third grade children in each of the sponsor groups; these data are summarized in Table A- in Appendix A. The measure obtained from this scale indicated attitudes toward the classroom environment.

Generally, the differences between Follow Through and non-Follow Through children on this attitudinal measure favored non-Follow Through children; in Sponsor Group 1 the difference was statistically significant ($p < .025$). In Sponsor Group 4, the difference favored Follow Through children and approached statistical significance ($p < .10$). Over all groups combined, however, the difference between Follow Through and non-Follow Through children was not statistically reliable ($p > .20$).

Teacher Ratings of Child Behavior--The adapted Classroom Behavior Inventory was completed by teachers at all grade levels in all sponsor groupings for nearly 250 Follow Through children and about 180 non-Follow Through children selected randomly. This inventory produced an aggregate score that reflected the extent to which the teachers judged the pupils' behavior to be adaptive to learning in the classroom environment. All of the differences among second and third graders shown in Table A-116 of Appendix A and one of the two differences among kindergartners and first graders shown in the same table favored Follow Through pupils. None of the differences between Follow Through and non-Follow Through within sponsor groups was statistically significant, although the overall difference at second and third grades was reliable ($p < .05$).

Comparisons of ratings provided by different teachers according to standards that may be idiosyncratic to individual teachers or a specific classroom must be interpreted with caution, particularly when comparisons are attempted between groups rated by different teachers.

Puzzle Task Competence and Anxiety--Situational tests requiring pupils to solve puzzles were administered individually to random samples of pupils at levels from kindergarten through grade three. Two measures were derived from observing puzzle-taking behavior: (1) an index of task competence that reflected ability to solve the puzzle and (2) a measure of task anxiety that reflected such child behavior in the puzzle-solving situation as sighing, talking to himself, or looking up for approval. Data from these two measures appear in Tables A-117 through A-118 in Appendix A.

At the second and third grades, none of the comparisons between Follow Through and non-Follow Through children on the task competence measure was statistically significant. Among lower grades, however, Follow Through pupils in Sponsor Group 2 earned significantly higher scores than non-Follow Through pupils ($p < .005$).

All of the comparisons at all grade levels of the task anxiety measures favored Follow Through pupils. At kindergarten and first grade these differences approached, but did not reach, statistical significance. At the second and third grades, only the comparison within Sponsor Group 4 reached statistical significance ($p < .05$), but the difference aggregated over all sponsor groups was statistically significant and favored Follow Through ($p < .01$).

These findings on task anxiety lend support to the findings reported earlier on school fearfulness. These two sets of measures give a strong impression of Follow Through children displaying a greater sense of self-confidence and absence of anxiety in evaluation or problem-solving situations. While the magnitude of the absolute difference is small, the consistency of the direction of difference compels notice.

VIII RELATIONSHIPS AMONG SELECTED PUPIL, PARENT, AND TEACHER VARIABLES

This section contains an examination of relationships among the measures of pupil achievement, attitudes toward school and interpersonal feelings, and relates these pupil measures, in turn, to measures of parents' awareness and participation, family life style variables, and teacher characteristics.

These relationships have been examined in the most direct way possible by casting the measures of parent awareness and participation, life style variables, and teacher characteristics as independent variables in cross-tabulations that contrast Follow Through and non-Follow Through children on the pupil measures. The relationships among the dependent variable measures of pupil achievement, attitudes, and interpersonal feelings have relied heavily on bivariate correlations. Analyses using more sophisticated multivariate regression and other techniques are not yet completed.

This section presents the following parts in sequence:

(1) Parent awareness and participation related to pupil achievement and attitude

(2) Family life style related to pupil achievement and attitudes

(3) Kindergarten teacher characteristics related to kindergarten pupil achievement

(4) Relationships among pupil measures of achievement, attitudes toward school, and interpersonal feelings

(5) Relationships among non-cognitive, achievement, and attitude measures.

Relationships Among Measures of Parent Awareness and Participation, and Pupil Achievement and Attitudes

In Section VI a number of outcome measures were identified on which Follow Through and non-Follow Through parents differed. These measures of parents' behavior and beliefs all refer to outcomes desired by Follow Through, either as reflected generally in the Guidelines or specified by various program approaches. To review, these variables were:

(1) Parent awareness of classroom activities

(2) Parent/school contacts beyond the classroom

(3) Parent works in classroom or school

(4) Visits to classroom by family members

(5) Recency of parent/teacher talks

(6) Parent general satisfaction with child's school

(7) Parent sense of influence and control over school

(8) Parent feelings that his ideas matter to those who run the schools

(9) Parent involvement in social and political groups

(10) Follow Through parents' awareness of the PAC.

In most Follow Through projects, efforts are directed toward making parents more aware of what is happening in the classroom, increasing the frequency of their contact with school personnel, helping them increase their involvement in school affairs, and so on. These objectives, as the discussion in Section VI emphasized, are being realized in greater or lesser degree throughout all Follow Through projects. Follow Through also seeks to increase children's ability to succeed in school (as measured in the evaluation by achievement test performance) and to help children develop more positive attitudes toward school and warmer and more trusting interpersonal relationships. These objectives, too, are being achieved, particularly at entering grade levels, as the data in Section VII demonstrated.

Changes in both parent and in child behavior and beliefs are considered important in their own right. It is also hoped that the two sets of behaviors will be mutually reinforcing. It is to this interaction that the discussion below is addressed.

The data discussed are limited to children at kindergarten and entering first grade--the Follow Through children who are the first to experience reasonably well established program approaches. The data are summarized in Tables A-119 through A-127 in Appendix A , and signs rather than quantities are used to denote direction of differences between Follow Through and non-Follow Through children on three contrasts: (1) the Fall, or pre-test, measure, (2) the Spring, or post-test, measure, and (3) the difference between Fall and Spring scores, or the gain measure. As in the earlier sign tables, a plus (+) sign on the achievement measure and a negative (-) sign on the two attitude measures shows that Follow Through children exceed non-Follow Through children in the desirable direction. The signs again appear in sets of three: the first sign denotes the difference between Follow Through and non-Follow Through at the Fall point, the middle sign shows the difference at the Spring point, and the third sign designates the difference in the gain.

Parent Awareness of Classroom Activities

Overall, at both kindergarten and entering first grade, there is no obvious relationship between parent awareness and child performance. There is some suggestion that the children of parents who are moderately aware (neither most nor least aware) do less well on achievement measures than children of parents who are most and least aware of classroom activities. This relationship, although weak, is probably accurate if one assumes that the most usual reason for a contact between parent and teacher is to discuss a child's problems. From this it would follow that (1) parents of children who were not doing well in school would likely be specifically requested to visit the teacher or the classroom and (2) parents of children who were doing well in school usually would be the ones most likely to seek information voluntarily about classroom activities.

When the sponsor groups are contrasted, one pattern deviates somewhat from the overall. In Sponsor Group 2, there is a tendency for least parent awareness of classroom activity to be associated with the least positive pattern of child performance; this relationship stands in contrast to the other sponsor groups.

The relationship between parent awareness and children's attitudes toward school suggests the following:

(1) Children of parents who are most aware of the classroom activity tend to show a shift toward more positive attitudes during the school year.

(2) Children of parents who are least aware of classroom activities are less likely to show any shift in attitudes or, if a shift occurs, to shift toward a less positive attitude.

The relationships, to be sure, are weak overall and are not equally apparent in each sponsor group.

No consistent pattern is apparent in the relationship between parent awareness of classroom activities and a measure of children's interpersonal feelings. A shift toward more positive interpersonal feelings seemed somewhat more likely to be shown by children of parents who were most aware of classroom activities in contrast to children of parents who were least aware but this association was weak at best.

Parent/School Contacts Beyond the Classroom

These parent contacts with the school refer to persons other than the classroom teacher, such as the school nurse, principal, or a social worker. Thus, high contact most commonly would be associated with a specific family need or problem. When parent behavior is examined in relation to pupil achievement, some support for this interpretation may be seen. For example, there was a slight tendency for more frequent contacts to be associated with negative changes in children's achievement between the Fall and Spring points.

When frequency of parent contact was examined with regard to children's attitudes toward school, shifts toward more positive attitudes were more likely to be displayed by children of parents who had some or frequent contact with the school in contrast to those who had none. Essentially the same trend was reflected in children's interpersonal feelings as in their attitudes toward school: contacts with the school by parents were related with a shift toward more positive interpersonal feelings by children.

Parent Works in Classroom or School

Three categories of work--as a volunteer, as a paid worker, or not at all--were recorded for parents. No clear relationships were evident between parents' working and child achievement, although part of the inability to detect such may be due to the fact that a very small fraction of non-Follow Through parents worked either as volunteers or for pay. Children of parents who were paid to work in the classroom seem to be the best performers in Sponsor Group 1. In contrast, the best performers in Sponsor Group 2 appear to be the children of parents who worked as volunteers. The available data do not suggest that child achievement was strongly influenced one way or another by the fact that a parent works either for pay or as a volunteer.

Similarly, children's attitudes toward school do not appear to be related in predictable ways with the fact that their parents work in the classroom. If anything, there is a slight tendency for more desirable shifts in attitude to be associated with the fact that a mother does not work in the classroom.

The association between children's interpersonal feelings and work in the classroom by parents was equally indeterminate.

Visits to the Classroom by Family Members

Classroom visits was a part of the "awareness" variable discussed earlier and a similar pattern of relationship between visits and child achievement was detectable: the children with the most desirable achievement patterns tended to be those whose parents have either not visited the classroom at all (presumably because the child is doing well) or have visited the classroom many times.

The relationship of classroom visits to attitudes was somewhat similar but was more likely to differ from one sponsor group to another. In Sponsor Group 2, shifts toward more positive attitudes were more likely to be shown by children of parents who had made one or two visits in contrast either to many visits or no visits. On the other hand, a reverse of this pattern was reflected in Sponsor Group 1 where most positive attitudes were associated with either no visits or many.

Children's scores on the interpersonal feelings measure did not seem to be associated in any clear way with the frequency of visits to the classroom by the parent. There was some hint that frequent visits were more likely to be made by parents of children whose interpersonal feelings scores were least desirable, but this tendency was a weak one.

Recency of Parent/Teacher Talks

Parents of children whose achievement pattern indicated that they either were not performing well at the outset of the year or performed less well later in the year were somewhat more likely than other parents to have had recent visits with the teacher. This pattern is consistent with the interpretation suggested earlier with respect to general parent awareness of classroom activities.

In at least Sponsor Groups 1 and 2, children of parents who had had most recent visits with the teacher were somewhat more likely to show a shift toward more positive attitudes toward school. A reverse of that pattern, however, is suggested in Sponsor Group 3 in which the most positive attitude shifts were shown by children whose parents had either not talked with the teacher at all or had done so more than a month ago.

Children's scores on the interpersonal feelings measure, when examined in relation to parents' talks with the teacher, showed essentially the same pattern as displayed on the attitudes toward school index. Shifts toward more positive interpersonal feelings were somewhat more likely to be shown by children whose parents had had recent talks with the teacher--especially for Sponsor Groups 1 and 2--than by children whose parents had never talked with the teacher or had not done so for at least a month.

Parent General Satisfaction with Child's School

The relationship of parents' satisfaction to child's achievement showed consistent but complementary patterns for Sponsor Groups 1 and 3. In Sponsor Group 1, highest levels of satisfaction tended to be associated with children's gains; in Sponsor Group 3, lower levels of satisfaction were associated with children's losses. No relationship between parent satisfaction and child achievement was detectable in either Sponsor Group 2 or Sponsor Group 4.

A pattern similar to that between parent satisfaction and achievement was suggested by the data that related the former to children's attitudes toward school.

No sensible pattern is evident in the data that related parent satisfaction with children's scores on the interpersonal feelings scale. If anything, these data suggested that more positive interpersonal feelings by children were associated with lower levels of satisfaction by Follow Through parents.

Parent Sense of Influence and Control Over Schools

In Sponsor Group 3, there was some indication that a high sense of control was associated with both higher levels of achievement and greater gains in achievement. In Sponsor Groups 1 and 2, however, the relationships were more obscure and even suggested the possibility that a moderate sense of control, rather than a high or low sense of control, was more likely to be associated with better achievement by Follow Through children.

The measure of children's attitudes toward school, when viewed in relation to the parents' sense of influence, showed a pattern similar to that for pupil achievement except that the positions of Sponsor Groups 1 and 3 were reversed: in Sponsor Group 3, shifts toward more positive attitudes were more likely to be associated with a low sense of control by parents, whereas in Sponsor Group 1 they were associated with a high sense of control.

Parents' sense of influence over the schools and children's scores on the interpersonal feelings scale do not appear to be related in any systematic way.

Parent Feelings That His Ideas Matter

Only in Sponsor Group 1 was a plausible pattern evident between the parents' feelings that his ideas matter and the child's performance on the achievement measure. In this sponsor group, a weak but discernible tendency existed for better patterns of achievement to be displayed by children of parents who felt that their ideas were important to those who run the schools. In Sponsor Groups 2 and 3, no pattern was seen.

Pupils' attitudes toward school seemed to follow more favorable patterns of change among children whose parents were moderate in feelings about whether their ideas mattered.

No interpretable relationship was perceived between children's scores on the interpersonal feelings measure and parents' feelings regarding the value of their own ideas. In one sponsor group it appeared that the most desirable changes by children were associated with parents' feelings that their ideas did not matter. In another sponsor group the most favorable shifts by children occurred among those whose parents felt most strongly that their ideas did matter.

Parent Involvement in Social and Political Groups

Overall, the most desirable patterns of child achievement were displayed by children whose parents reported either high involvement or low involvement (rather than an intermediate level of involvement) in social and political groups. Sponsor Groups 2 and 3, however, showed somewhat contradictory patterns. In Sponsor Group 2 the most desirable patterns of pupil change in achievement were shown by children whose parents reported high involvement. In Sponsor Group 3 the most desirable patterns were displayed by those children whose parents reported low involvement.

Children's attitudes toward school, as well as their scores on the interpersonal feelings measure, both tended to show somewhat more desirable shifts among those whose parents reported low, rather than high, involvement in social and political groups.

Follow Through Parents Awareness of the PAC

It was noted earlier (Section VI) that Follow Through parents in Sponsor Group 2 were most likely to report an awareness of the PAC. This outcome was most visible at kindergarten and non-entering first grade since, at those grade levels, Sponsor Group 2 included two projects that follow the model of Sponsor N. The relationship of Follow Through parents' awareness of PAC and children's performance on achievement measures correlated in somewhat different ways at each grade level due to the dominance of Sponsor N in Sponsor Group 2. Over allsponsor groups, the relationship between pupil achievement and parent awareness of PAC was weak and negative at the kindergarten level, moderately high and positive at entering first grade, essentially zero at non-entering first grade, and moderate but positive at second grade.

When data were summed over all grade levels according to sponsor group, the net effect was for a moderately high positive relationship to obtain between children's achievement and parents' awareness of PAC. The primary reason for this moderately high overall relationship was the consistent pattern displayed by parents and children in Sponsor Group 1. At all grade levels, children in this sponsor group showed the highest pattern of achievement. In addition, parents of children in this sponsor group were, at all grade levels, above the average of all Follow Through parents in their awareness of the PAC.

There is no table in Appendix A to reflect these data since there were no contrasts between Follow Through and non-Follow Through.

In summary: the net impression from efforts to rationalize relationships between measures of parent awareness/participation and children's achievement/attitudes is that no systematically useful overall associations exist although the patterns within some sponsor groups were moderately consistent. For example, Sponsor Group 2 showed stronger indications of parent awareness of classroom activities and of their own influence in school matters. However, because this sponsor group does not show as high patterns of pupil achievement as do some others, it is difficult to develop plausible interpretations of relationships between parent behavior and beliefs and child performance and attitudes.

Sponsor Group 1, as has been observed, includes the children who most regularly display the highest scores on the pupil achievement measures. Parents in Sponsor Group 1 seem to be moderately well informed about classroom activities.

Children and parents in Sponsor Group 3 displayed a pattern that was generally mixed, which may be fitting to the eclectic character of that sponsor grouping. Sponsor Group 4, by definition, is a heterogeneous collection of projects that shared in common only the fact that they are all self-sponsored. As a grouping of projects, those in Sponsor Group 4 evinced high patterns of child achievement relative to non-Follow Through at the kindergarten level but were much less likely to do so at higher grade levels. It is notable, however, that the contrast between Follow Through and non-Follow Through parents on such measures as feelings of satisfaction toward children's progress and a sense that their ideas mattered was seen most sharply in this sponsor group.

Relationships Among Family Life Style Variables and Pupil Achievement and Attitudes

A number of variables descriptive of family life style were examined for their relationship to the outcome measures of pupil achievement, attitudes toward school, and interpersonal feelings. The basic set of variables, used in tabulations at all grade levels for each grouping of sponsors, are defined operationally in Appendix 8 . Differences between Follow Through and non-Follow Through families on these same variables were described in Section VI.

Analyses of these life style variables in relation to child achievement and attitudes do not reveal an orderly pattern. Overall, there is no consistent relationship, from one grade level to another or among sponsor groupings. What does emerge, however, is a pattern of association between the poverty level and pupil achievement at all grades tested and among all sponsors. This pattern showed clearly and repeatedly throughout Figures 1 to 12. The life style variables, in turn, also tend (with rare and inconsistent exceptions) to be associated with poverty level. No instance of consequence was found in which a relationship between a life style variable and poverty level obtained for Follow Through families and did not also hold for non-Follow Through families. To summarize:

(1) Poverty level and pupil performance and attitudes usually are related; these associations were shown in Figures 1 through 12.

(2) Poverty level and family life style variables usually are related.

(3) Life style variables and pupil achievement and attitude measures often are related, but seldom as strongly as the relationships between poverty and pupil performance.

(4) Follow Through and non-Follow Through families usually do not differ systematically from one another on the life style measures when poverty level is held constant.

The following tabulations illustrate these points. The first two tabulations show relationships--first for Follow Through and then for non-Follow Through families at all grade levels combined--between a measure of parent-child involvement and level of poverty. (This measure of involvement means that the parent takes the child shopping and on out-of-town trips.)

	Percent of Follow Through Families by Poverty Classification			
Parent Involves Child	Certain Poverty	Possible Poverty	Not Poverty	Total
Frequently	13.1%	19.0%	31.6%	21.2%
Moderately	46.3	52.1	48.4	48.5
Infrequently	40.6	28.9	19.9	30.4
Total	100.0%	100.0%	100.0%	100.0%
	(1,035)	(641)	(923)	(2,599)

The chi square value for this distribution is 152.59 ($p < .001$) and the contingency coefficient is .236.

A similar tabulation for non-Follow Through families is nearly identical:

	Percent of Non-Follow Through Families by Poverty Classification			
Parent Involves Child	Certain Poverty	Possible Poverty	Not Poverty	Total
Frequently	14.3%	21.0%	34.4%	25.1%
Moderately	45.0	51.0	50.7	48.9
Infrequently	40.7	28.1	15.0	26.0
Total	100.0%	100.0%	100.0%	100.0%
	(460)	(310)	(675)	(1,445)

This distribution produces a chi square of 118.75 ($p < .001$) and a contingency coefficient of .276.

The frequency with which the parent involves the child clearly is related to poverty, but the question of whether this association is different for Follow Through than for non-Follow Through can be answered by the following reclassification of the above data:

Parent Involves Child	Percent of Certain and Possible Poverty Families: Follow Through	Percent of Certain and Possible Poverty Families: Non-Follow Through	Total
Frequently	15.4%	17.0%	15.9%
Moderately	48.5	47.4	48.2
Infrequently	36.1	35.6	35.9
Total	100.0%	100.0%	100.0%
	(1,676)	(770)	(2,446)

The chi square obtained from this distribution is 1.042 ($p > .50$); the contingency coefficient of .021 affirms the absence of a relationship.

When the less poor Follow Through and non-Follow Through families are compared, a slight difference is revealed:

Parent Involves Child	Percent of Not Poverty Families: Follow Through	Percent of Not Poverty Families: Non-Follow Through	Total
Frequently	31.6%	34.4%	32.8%
Moderately	48.4	50.7	49.4
Infrequently	19.9	15.0	17.8
Total	100.0%	100.0%	100.0%
	(923)	(675)	(1,598)

This distribution is described by a chi square value of 6.689 ($p < .05$), but the contingency coefficient of .065 shows that the relationship is a weak one.

Relationships of Kindergarten Teacher Characteristics and Practices to Kindergarten Pupil Achievement

In Section V preliminary comparisons of Follow Through and non-Follow Through teachers were presented. As noted in that section, a full analysis of these data has not yet been completed. However, some of the teacher characteristics and practices as they relate to kindergartners' achievement are discussed below.

Teacher Age and Ethnic Origin

Differences between Follow Through and non-Follow Through pupils on achievement test scores were not statistically significant at any teacher age stratum. The category in which the largest difference favoring Follow Through occurred was in the teacher age range from 30 to 39; in this classification the significance of the difference between Follow Through and non-Follow Through pupils was less than .20. Differences between Follow Through and non-Follow Through were even less likely to be significant for ages below 30 and above 39.

Comparisons between Follow Through and non-Follow Through pupils according to ethnic origin of the teacher did not show statistically significant differences.

Teacher's Academic Background and Certification

The only level of teacher academic background in which the differences between Follow Through and non-Follow Through pupils approached statistical significance was among teachers who had earned masters degrees. In this category, the difference favoring Follow Through was significant at about the .15 level.

Consistent with these findings there also was some tendency for the largest difference between Follow Through and non-Follow Through pupils to occur among teachers who held the highest level of certification granted. This difference was significant at about the .15 level.

Formal Training in Teaching Disadvantaged Children

At first glance these findings appeared startling, for the category which shows the largest apparent difference between Follow Through and non-Follow Through pupils are the teachers who had no prior training in teaching disadvantaged children. Upon reflection, however, this difference may be explained by the impact of sponsor support and sponsor materials on Follow Through teachers. The difference favoring Follow Through was significant at the .05 level.

It is curious to note that the Follow Through teachers whose pupils showed the smallest mean gain in academic scores during the 1969-70 school year were those who rated their formal training in teaching disadvantaged children as very helpful.

On-the-Job Teacher Training

The difference between Follow Through and non-Follow Through pupils, both of which were instructed by teachers who had received on-the-job training that they judged helpful, was statistically significant ($p < .05$) and favored Follow Through. This finding also supports the inference that sponsor support and local training in Follow Through has been constructive.

Perceived Advantages in Teaching in Follow Through

Contrasts between pupils with teachers who shared similar judgements regarding the advantage of teaching in Follow Through were not statistically significant. However, among Follow Through teachers, the group whose pupils showed the greatest gains during the school year were those who perceived much advantage (in contrast to some or no advantage) in teaching in Follow Through.

Teacher Satisfaction with Pupil Progress

Follow Through pupils with teachers who said they were very satisfied with their pupils' progress performed significantly better than non-Follow Through pupils with teachers who also reported high satisfaction. This difference was significant at less than the .01 level. Furthermore, among Follow Through teachers, a strong association was evident between the teachers' report of satisfaction and the mean gain demonstrated by their pupils during 1969-70. This strong association stands in contrast to an absence of relationship between pupil gains and teacher satisfaction among non-Follow Through teachers.

Home Visits by Teachers

Follow Through and non-Follow Through teachers differed greatly in the proportion of home visits reported. Half of the non-Follow Through teachers reported no visits whatsoever, one-fourth reported from one to five visits, and the remainder reported six or more visits; the median number of visits was just less than 1.0. Follow Through teachers, in contrast, were far more likely to report home visits; more than 77.0% of them reported one or more home visits and the median number of visits for all Follow Through teachers was 9.0.

Despite differences between Follow Through and non-Follow Through teachers in the number of home visits reported, there were no significant differences between Follow Through and non-Follow Through pupils in measured achievement in any of the "number of visits" categories.

Both Follow Through and non-Follow Through teachers provided information about the kinds of persons who made home visits (teachers, aides, social workers, and others). Among non-Follow Through teachers, more than two-thirds of the visits reported were made by teachers. Within Follow Through, home visits were more equally distributed among teachers, aides, social workers, and other personnel. There were no clear differences in pupil performance associated with the identity of the person making the home visit.

Follow Through and non-Follow Through teachers differed slightly in their judgments of the importance of home visits. As their behavior would suggest, Follow Through teachers were more likely to judge home visits to be very important. The largest difference (although not a statistically significant one) between Follow Through and non-Follow Through pupils on achievement, however, occurred among those pupils whose teachers did not consider visits very important.

Parent Participation in Classroom Activities

Teachers were asked whether they thought that parent participation in classroom activities should be greater than it now is, remain about the same, or be less. Follow Through and non-Follow Through teachers differed in these assessments ($p < .025$ by chi square). Follow Through teachers generally were more supportive of increased parent participation in the classroom, although the modal response for both Follow Through and non-Follow Through teachers was for the level to remain the same. There were no statistically significant differences between Follow Through and non-Follow Through pupils in achievement according to teachers' judgments about parent participation.

Number of Assistants and Volunteers in the Classroom

Follow Through teachers are far more likely to have assistants in the classroom than are non-Follow Through teachers. Only one Follow Through teacher of the approximately 290 responding to the survey reported no assistant in the classroom. In contrast, 38% of the non-Follow Through teachers had no assistants and only 3 out of 64 non-Follow Through teachers reporting an assistant indicated that they had more than one--42% of the Follow Through teachers had more than one assistant. There were no significant differences in pupil achievement according to the number of assistants reported.

Follow Through and non-Follow Through teachers also differed considerably in the presence of volunteers in their classrooms. Among non-Follow Through teachers, 86% reported no volunteers, whereas within Follow Through the corresponding percentage was 59%. A statistically significant difference in pupil achievement was noted for Follow Through and non-Follow Through teachers who had two volunteers. Although the total number of cases with pupil scores available was small (nine Follow Through and five non-Follow Through), the difference, favoring Follow Through, was significant at less than the .02 level.

Relationships Among Measures of Pupil Achievement, Attitude Toward School, and Interpersonal Feelings

The findings presented below are based on Fall and Spring pupil scores on the achievement battery, the attitude scale dealing with feelings about school, and the attitude scale concerned with interpersonal relationships. Most of the data are from 18 kindergarten projects in which both Fall and Spring tests were administered. Four projects are in Sponsor Group 1, five in Sponsor Group 2, four in Sponsor Group 3, four in Sponsor Group 4, and one in Sponsor Group 5. In all, the number of children in the 18 projects totaled 1,552 for Follow Through and 894 for non-Follow Through.

Two measures were used in computing correlations to examine these relationships. One was the Fall-to-Spring change score, defined as:

$$(\text{post} - \text{pre}) = \text{Change}$$

The second was the difference between change scores, defined as:

$$\text{FT}_{(\text{post-pre})} - \text{NFT}_{(\text{post-pre})} = \text{Difference}$$

In one set of analyses, pupils were categorized according to level of poverty within the project. In another analysis, the project average across all poverty classifications was used as the unit. For correlations from the non-cognitive study, the pupil was the unit. Both sets of correlations are summarized in Table 27.

Overall, there is a small but perceptible relationship between different score measures of pupil achievement and attitude toward school. This relationship is in the expected and desired direction--higher achievement gains tend to be associated with positive changes in attitude toward school. (These correlations appear as negative in Table 27 since a low score on the attitude measure denotes a positive attitude.)

The relationship between achievement and attitude toward school holds for all sponsor groups except Sponsor Group 1, in which the correlation did not differ significantly from zero. In Sponsor Groups 2 and 3, by contrast, the correlation reached statistically significant levels ($p < .01$ and $p < .002$, respectively) despite the similarly small number of units. In Sponsor Group 4, the correlation is marginally reliable ($.20 > p > .10$). The number of subcategories in Sponsor Group 5 was too small to permit a generalization about the relationship.

Table 27

CORRELATIONS BETWEEN STANDARDIZED MEASURES OF SCHOOL ACHIEVEMENT, ATTITUDES TOWARD SCHOOL AND LEARNING, AND INTERPERSONAL FEELINGS FOR KINDERGARTNERS AND FIRST GRADERS

Correlations Between Change (post-pre) Measures

Group	N	Achievement vs. Attitudes to School*	Achievement vs. Interpersonal Feelings*	Attitudes to School vs. Interpersonal Feelings
FT	18 projects	.068	.011	.711
NFT	18 projects	-.417	-.136	.650
FT (K & 1)	~120 pupils	-.092	-.058	.333
NFT (K & 1)	~100 pupils	-.189	-.035	.369
Correlations Between Difference (FT_{change} - NFT_{change}) Measures				
All projects	18	-.314	-.126	.714
All projects	63 poverty categories (18 projects)	-.242	.031	.505
Sponsor Group 1	14 poverty categories (4 projects)	.079	.373	.148
Sponsor Group 2	15 poverty categories (5 projects)	-.645	.169	.494
Sponsor Group 3	16 poverty categories (4 projects)	-.720	-.051	.650
Sponsor Group 4	15 poverty categories (4 projects)	-.392	-.444	.702
Sponsor Group 5	3 poverty categories (1 project)	-.865	.385	.130

---

* On the two attitude measures, lower scores denote more positive feelings. On the achievement measures, higher scores denote superior achievement. Thus, a negative correlation between an attitude and achievement measure denotes achievement gain and positive change in attitudes.

If attitude toward school is thought of as a predictor of achievement, then this evidence suggests that negative attitudes toward school are better predictors of low achievement than positive attitudes are indicators of high achievement. Stated another way, the relationships between achievement and measures of attitude toward school are strongest in those sponsor groups in which the achievement difference scores are lowest (i.e., tend to favor non-Follow Through).

The strength of association between achievement gain and attitude toward school appears larger among non-Follow Through than among Follow Through pupils. For the 18 kindergarten projects, the correlation among non-Follow Through pupils was .42 but was essentially zero for Follow Through pupils. (Part of this difference in correlation almost certainly is due to the greater variability in both achievement and attitude measures for non-Follow Through children. On the attitude measure, for example, the variance for non-Follow Through was 6.19 in contrast to 4.19 for Follow Through.)

Achievement measures, expressed either as change scores or as difference scores, were not associated reliably with the measure of interpersonal feelings. The overall direction of the association was that which would be desired--higher achievement tended to be associated with more positive interpersonal feelings--but the magnitude of the relationship was too low to be considered statistically significant. Further, the relationship was erratic over sponsor groups.

The overall relationship between attitudes toward school and interpersonal feelings was fairly strong and consistently positive, and did not differ substantially between Follow Through and non-Follow Through children. Similarly, the relationship was moderately high within all sponsor groups except Sponsor Group 1.

Generalized attitudes toward school and learning, and feelings about teachers and classmates clearly are not independent of one another. Nevertheless, the two attitudinal measures are not interchangable as shown by the differences between them in the ways that they are associated with measures of achievement.

Relationships Among Non-Cognitive, Achievement, and Attitude Measures

As reported in an earlier section, a pilot study was undertaken in Spring 1970 to try out a number of measures of non-cognitive attributes that figured prominently in the objectives of several of the Follow Through approaches. A total of approximately 850 children in kindergarten through grade three were included in that pilot study, although not all of the non-cognitive measures were applied at all these grade levels. Since these same children had also participated in the achievement testing and had responded to the two attitude measures that accompanied it (attitudes toward school and interpersonal feelings), it was possible to examine the interrelationships among these several measures.

Tables 28 and 29 display correlations among the non-cognitive, achievement, and attitude variables for four subsets of children. Table 28 shows the correlations for children at kindergarten and first grade, and Table 29 presents the correlations for pupils at second and third grade.

The variables reflected in the correlation matrices were described in detail at the end of Section VII. The matrices also include six measures derived from the achievement battery and the school attitudes and interpersonal feelings scales. Three of these are the post, or Spring, scores on each measure and the other three are the change, or gain, scores between Fall and Spring. The correlation matrix for kindergarten and first grade contains four non-cognitive variables and the six measures derived from the classroom battery. The matrix for second and third grades includes nine non-cognitive measures in addition to the six derived from the classroom achievement battery.

One complication in interpreting the correlation matrix arises from the fact that varying numbers of children are reported in each coefficient, thus making it impossible to specify a single value that will represent a reliable non-zero relationship. A coefficient of .20 or greater in the kindergarten and first grade matrix can be considered significant at the .05 level or less. In the second and third grade matrix, a coefficient of at least .15 will be significant at or below the same level.

The two attitude scales used in the classroom battery (attitudes toward school and interpersonal feelings) were both scored to yield a lower score for the more positive attitude. In the correlation matrices shown in Tables 28 and 29, the signs on correlations involving these measures have been reversed so that a positive correlation between one of

Table 28

CORRELATIONS OF NON-COGNITIVE, ACHIEVEMENT, AND ATTITUDE SCORES*
FOR FOLLOW THROUGH AND NON-FOLLOW THROUGH
KINDERGARTNERS AND FIRST GRADERS

	2	7	8	9	10	11	12	13	14	15		Variable Name
2	1.0	.125	.124	.061	.141	.000	-.079	-.125	.028	-.015	2	Ethnic Identity
7	.074	1.0	.089	.037	.667	.161	.206	-.018	-.004	.005	7	Teacher Rating
8	.193	.193	1.0	-.147	.187	.220	.155	-.121	.064	.156	8	Task Competence
9	-.308	.033	-.097	1.0	.017	-.098	-.024	-.047	-.031	-.013	9	Task Anxiety
10	.240	.647	.192	.024	1.0	.220	.174	.175	.114	-.001	10	Achievement - Post
11	.030	.191	.011	.051	.153	1.0	.328	.106	.594	.170	11	School Attitudes† - Post
12	.231	.351	.169	-.165	.215	.361	1.0	-.066	.178	.710	12	Interpersonal Feelings - Post
13	-.214	-.122	-.095	-.032	.131	.049	-.001	1.0	.092	.058	13	Achievement - Change
14	-.042	-.004	-.166	.109	.167	.640	.275	.189	1.0	.333	14	School Attitudes† - Change
15	.187	-.022	.037	-.171	.157	.182	.607	.035	.369	1.0	15	Interpersonal Feelings - Change

---

* Follow Through correlations appear above the diagonal (1.0) and non-Follow Through correlations below it.

† Variables 11 and 14 are the school attitudes measure included as an element of the achievement test battery.

Table 29

CORRELATIONS OF NON-COGNITIVE, ACHIEVEMENT, AND ATTITUDE SCORES* FOR FOLLOW THROUGH AND NON-FOLLOW THROUGH SECOND AND THIRD GRADERS

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	1.0	-.196	.049	.035	-.226	-.173	-.030	-.127	.087	-.228	-.034	-.023	-.044	-.077	-.013
2	.191	1.0	.007	.062	.026	-.082	.002	.094	-.030	.108	-.048	-.094	.007	.122	-.086
3	-.155	-.109	1.0	.145	-.083	.064	.211	.056	-.094	.222	-.060	-.039	.001	-.084	-.003
4	.016	-.110	.341	1.0	.069	.057	.249	.076	-.025	.293	.046	.150	-.050	.072	.120
5	-.188	.102	.048	.049	1.0	-.101	.074	.031	-.066	.107	-.074	-.058	-.079	-.020	-.127
6	-.128	-.293	.202	.155	-.263	1.0	.220	.039	-.059	.320	.107	.207	.134	.059	.155
7	-.214	-.128	.304	.384	.095	.159	1.0	.216	-.101	.590	.080	.211	-.044	-.037	-.148
8	-.055	-.021	.222	.171	.036	.344	.197	1.0	-.108	.147	.093	.037	-.018	-.044	-.057
9	.114	.033	-.165	-.234	.009	.150	-.139	-.284	1.0	-.083	.219	-.030	.033	.041	.013
10	-.169	-.205	.223	.278	-.042	.313	.588	.259	-.133	1.0	.057	.110	.280	.015	-.008
11	-.019	-.082	.033	-.006	-.190	.225	.088	-.121	.062	.106	1.0	.282	.045	.604	.108
12	-.093	-.074	.025	.090	-.109	.218	.227	-.026	-.139	.198	.318	1.0	.026	.136	.343
13	-.019	.092	.144	.125	.018	.192	.013	-.020	.030	.418	.105	.033	1.0	.169	.149
14	-.042	-.080	-.017	-.100	-.146	.056	-.040	-.184	.035	.009	.608	.119	.006	1.0	.125
15	-.113	-.083	.017	-.015	-.109	.257	.099	-.021	-.031	.086	.261	.588	.044	.309	1.0

	Variable Name
1	School Fearfulness
2	Ethnic Identity
3	Locus of Control - Success
4	Locus of Control - Failure
5	Intrinsic Motivation
6	Attitude Toward School
7	Teacher Rating
8	Task Competence
9	Task Anxiety
10	Achievement - Post
11	School Attitudes - Post
12	Interpersonal Feelings - Post
13	Achievement - Change
14	School Attitudes - Change
15	Interpersonal Feelings - Change

---

* Follow Through correlations appear above the diagonal (1.0) and non-Follow Through correlations below it.

† Variable 6 is based on the non-cognitive test, "In My Classroom." Variables 11 and 14 are the school attitudes measure included as an element of the achievement test battery.

these attitude scores and another variable reflects a positive relationship between attitudes and the other measure. On all of the non-cognitive measures the scoring is such that a high score represents a greater amount of the attribute in question. This applies even to those measures such as the school fearfulness and task anxiety scores in which a low score would be considered most desirable.

Both Tables 28 and 29 reflect a general absence of high correlations among the non-cognitive measures. The predominance of generally low correlations supports the discriminant validity of the non-cognitive scores. The highest correlations in both matrices tend to be between the alternate expressions of the same variables (e.g., the post score on an attitude measure and the change score on an attitude measure). Correlations between the two expressions of the achievement measure (the post score and the change score) tend to be less high than correlations between post and change scores on the attitude measures. The principal reason for higher correlations between the alternate expressions of the attitude scores (post vs change) than for the achievement scores (post vs change) can be readily seen in bivariate plots. The attitude scores typically were skewed on both the Fall and Spring distributions; about half the children made the most postive of three possible responses each time. Further, those who responded positively in the Fall were very unlikely to shift to a rating less favorable than one scale point if they shifted at all. On the achievement measure, in contrast, pupils whose scores were low in the Fall were most likely to show large gains owing to the combination of regression effects and some ceiling limitations of the battery.

The comments which follow are speculative; such speculation may be excused if it triggers alternate explanations that also may be tested with these or smiliar children at later times.

Kindergarten and First Grade Correlations

A dominant relationship in both the Follow Through and non-Follow Through matrices is the correlation between the teacher ratings (Variable 7 in Table 28) and the post score on the achievement battery (Variable 10). This correlation is about .65 for both groups. Notable for its absence is a similarly strong relationship between teacher ratings and the achievement change score (Variable 13). These differences suggest that (1) teachers appreciate high achieving pupils and rate them positively and (2) teachers are less likely to appreciate children whose achievement is changing and therefore rate them less positively, perhaps because they create more difficult problems for the teacher.

The correlation between the teacher rating and the pupil's score on interpersonal feelings (Variable 7 vs Variable 12) tends to be higher for both Follow Through and non-Follow Through than the correlation between teacher rating and child's attitude toward school (Variable 7 and Variable 11). This suggests that child sociability is an important feature in the teacher's assessment of the child.

The ethnic identity score (Variable 2) correlates moderately with four different measures among non-Follow Through children: task anxiety (Variable 9), achievement - post (Variable 10), interpersonal feelings - post (Variable 12), and achievement - change (Variable 13). The ethnic identity variable does not correlate strongly with any other measure among Follow Through children. These differences between the two matrices suggest that race is not a viable issue in Follow Through programs which, if so, may be interpreted as a positive effect of program implementation.

Task competence measured in the puzzle situation (Variable 8) correlates more highly with school attitudes - post (Variable 11) among Follow Through pupils than among non-Follow Through pupils. While a plausible case can be made for the kinds of behaviors leading to a high competence score to be characteristic of children whose attitudes toward school are improving, no obvious reasons can be imagined why the relationship should be different for Follow Through and non-Fellow Through children.

The school attitude - post score (Variable 11) and interpersonal feelings - post score (Variable 12) correlate with one another and with the achievement - post measure (Variable 10) among both Follow Through and non-Fellow Through pupils. For Follow Through pupils, the relationship between the achievement score and the school attitude score is stronger than the relationship between the achievement score and the interpersonal feelings score. The reverse holds in non-Follow Through. This hints at a more rational relationship between attitudes or feelings and achievement for Follow Through than non-Fellow Through children. The magnitude of the differences among correlations, however, is small and these differences may be random.

Second and Third Grade Correlations

An initial feature of interest in the matrices for Follow Through and non-Follow Through pupils at second and third grade is the presence of more high coefficients in the non-Follow Through sample than in the Follow Through one. No ready explanation can be suggested for this. The mean scores, ranges, and variances are similar from one group to another.

It may be that there is greater trait variability among the non-Follow Through pupils than the Follow Through pupils. Since the measures were initially developed by others for use with a representative rather than a disadvantaged population, the differences suggest that the non-Follow Through pupils are more like the general population of pupils for whom the measures were developed initially.

Among second and third graders, as among kindergartners and first graders, the relationship between teacher ratings and the two achievement measures (Variables 10 and 13) were similar and a similar explanation is suggested.

As was the case with kindergartners and first graders, teacher ratings (Variable 7) and interpersonal feelings scores (Variable 12) were correlated more highly than teacher ratings and attitudes toward school scores (Variable 11) for both Follow Through and non-Follow Through pupils. As noted previously, this suggests that child sociability affects teacher ratings and, further, that sociability is a more visible quality than attitudes toward school.

The three attitude measures (Variables 6, 11, and 12) correlate somewhat more highly with one another among non-Follow Through than Follow Through pupils. This probably is due simply to the fact that the score ranges and variances were slightly greater among non-Follow Through pupils.

The correlations between teacher ratings (Variable 7) and the two locus of control measures (Variables 3 and 4) suggest the possibility that teachers appreciate responsible self-punitiveness--children who accept some blame for learning difficulties. The relationships are slightly stronger in non-Follow Through classrooms than Follow Through, which may reflect a moderating influence by Follow Through.

The locus of control measures (Variables 3 and 4) also correlate somewhat differently with achievement - post (Variable 10) in both groups. The acceptance of responsibility for failure score (Variable 4) is a slightly better predictor of achievement than the acceptance of responsibility for success score (Variable 3).

The ethnic identity measure (Variable 2) tends to correlate somewhat more strongly with other variables among non-Follow Through children than among Follow Through children. This supports the impression gained from examining the kindergarten and first grade relationships in which it was suggested that race per se is a less viable factor in Follow Through classrooms.

The correlations between the attitude toward school measure obtained with the "In My Classroom" instrument (Variable 6) and the two shorter attitude scales (Variables 11 and 12) tend to be low but, for both groups, the correlation between Variable 6 and Variable 12 is stronger than the correlation between Variable 6 and Variable 11. The In My Classroom score represented in Variable 6 contains many items from among the 20 in the full scale that refer to intra-personal and inter-personal feelings. The shorter scales, on the other hand, are more factorially "pure" which probably accounts for the greater correlation between the attitude toward school score and the interpersonal feelings score than between the In My Classroom score and the attitudes toward school score.

Appendix 1

DEFINITIONS OF POVERTY

Appendix 1

DEFINITIONS OF POVERTY

This appendix presents the "Index of Poverty--The Poverty Line" exactly as appended to the Follow Through Program Guidelines dated February 24, 1969, and then describes the "SRI Poverty Categories" derived from the parent interview data (see Appendix 6) and used throughout the analyses.

Index of Poverty--The Poverty Line

OEO has extablished a "poverty line" index for determining eligibility of children for Head Start. This same index will be used for Follow Through. The chart below shows, by household size and levels of gross income, those families which are considered to fall below the poverty line.

OEO Poverty Guidelines for FY 1969

Family Size	Non-Farm	Farm
1	$1,600	$1,100
2	2,100	1,500
3	2,600	1,800
4	3,300	2,300
5	3,900	2,800
6	4,400	3,100
7	4,900	3,400
8	5,400	3,800
9	5,900	4,100
10	6,400	4,500
11	6,900	4,800
12	7,400	5,200
13	7,900	5,500

The total family income to be used in determining the eligibility of low-income children in Follow Through should be based on the prior calendar year, or the twelve months previous to school opening, whichever most accurately describes the family's need.

In order to be considered low-income and, therefore, eligible for the full-range of comprehensive services in Follow Through, a child must either (1) have met the above poverty criteria at the time of entrance to Head Start or a similar quality preschool program or (2) meet the above poverty criteria at the time of entrance to Follow Through. Such a child remains eligible for Follow Through services unless the family income rises $3,000 above the applicable poverty line.

Children from a family that is on welfare are considered eligible even though the family income may exceed the poverty line.

SRI Poverty Categories

Six ranges of annual income were used in the parent interview. The number of categories was limited since there were fears that any more detailed questioning about income would meet with negative reactions from the respondents (in practice, such fears proved to be largely unjustified). These six ranges overlap the OEO "poverty line" index for Fiscal Year 1969, as appended to the Follow Through Guidelines, and therefore operational definitions were developed for classifying the respondents into three poverty groups, as shown below in terms of the number of people in the family (household):

Total Annual Income (dollars)	Certain Poverty		Possible Poverty		Not Poverty	
	Farm	Non-Farm	Farm	Non-Farm	Farm	Non-Farm
≤$1,000	≥1	≥1	--	--	--	--
$1,000-2,999	≥4	≥3	2-3	2	1	1
3,000-4,999	≥8	≥7	4-7	3-6	≤3	≤2
5,000-7,499	≥13	≥11	8-12	7-10	≤7	≤6
7,500-9,999	≥17	≥15	13-16	11-14	≤12	≤10
10,000+	≥21	≥19	17-20	15-18	≤16	≤14

The "Certain Poverty" group includes all respondents whose family incomes fall below the OEO's 1969 poverty line and the "Not Poverty" group includes all those with incomes above the poverty line. "Possible Poverty" signifies, as its name implies, the respondents whose household incomes possibly meet the OEO definition--the respondents remaining, who could not be classified unambiguously under "Certain" or "Not."

Appendix 2

LIST OF PROJECTS AND DATA COLLECTION ACTIVITIES
(Fall 1968 to Spring 1970)

Appendix 2

LIST OF PROJECTS AND DATA COLLECTION ACTIVITIES
(Fall 1968 to Spring 1970)

Sponsor and Project Location	Program Review		Pupil Achievement Testing				Parent Interview	Teacher and Aide Questionnaire	Classroom Observation		Community Case Study		Non-Cognitive Testing
									SRI	Soar*			
	Spr 69	Spr 70	Fall 68	Spr 69	Fall 69	Spr 70	Spr 70	Spr 70	Spr 70	Spr 70	68-69	69-70	Spr 70
SELF-SPONSORED													
Corpus Christi, Tex.	X	X											
Dade County (Miami), Fla.	X	X	X	X	X	X	X	X					X
Detroit, Mich.	X	X	X	X	X	X	X	X					
Hawaii	X	X			X			X					
Monongalia County (Morgantown), W. Va.	X	X	X	X	X			X					
New York City, PS-33, N.Y.	X	X	X	X	X		X	X					
Philadelphia VII, Pa.	X	X	X	X	X	X	X	X					
Portland, Ore.	X	X	X	X	X	X	X	X					
Prince Georges County (Upper Marlboro), Md.‡	X				X								
Puerto Rico	X	X											
San Diego, Calif.	X	X	X	X	X	X	X	X			X	X	
Great Falls, Mont.†	X	X	X	X	X			X					
Riverton, Wyo.	X	X											
Stewarts Point, Calif.	X	X											
Van Buren, Me.	X	X											

LIST OF PROJECTS AND DATA COLLECTION ACTIVITIES (continued)

Sponsor and Project Location	Program Review		Pupil Achievement Testing				Parent Interview	Teacher and Aide Questionnaire	Classroom Obser-vation		Com-munity Case Study		Non-Cognitive Testing
									SRI	Soar*			
	Spr 69	Spr 70	Fall 68	Spr 69	Fall 69	Spr 70	Spr 70	Spr 70	Spr 70	Spr 70	68-69	69-70	Spr 70
FAR WEST LABORATORY FOR EDUCATIONAL R&D													
Berkeley, Calif.	X	X	X	X	X	X	X	X		X			
Buffalo, N.Y.	X	X											
Cleveland, O.	X	X	X	X	X			X			X	X	
Duluth, Minn.	X	X	X	X	X	X	X	X	X	X			X
Fresno, Calif.	X	X											
Goldsboro, N.C.	X	X											
Lebanon, N.H.	X	X			X		X	X		X			
St. Louis, Mo.	X	X											
Salt Lake City, Utah	X	X											
Sumter, S.C.	X	X											
Jefferson Parish (Gretna), La.†		X											
Owensboro (City), Ky.		X											
Tacoma, Wash.		X			X			X					
Washoe County (Reno), Nev.		X											
UNIVERSITY OF ARIZONA													
Vermilion Parish (Abbeville), La.	X	X											
Baltimore, Md.	X	X			X		X	X					
Chickasha, Okla.‡§	X	X	X		X								
Choctaw CAA (Philadelphia), Miss.	X	X											

LIST OF PROJECTS AND DATA COLLECTION ACTIVITIES (continued)

Sponsor and Project Location	Program Review		Pupil Achievement Testing				Parent Interview	Teacher and Aide Questionnaire	Classroom Obser- vation		Community Case Study		Non-Cognitive Testing
									SRI	Soar*			
	Spr 69	Spr 70	Fall 68	Spr 69	Fall 69	Spr 70	Spr 70	Spr 70	Spr 70	Spr 70	68-69	69-70	Spr 70
Des Moines, Ia.	X	X											
Durham County (Durham), N.C.	X	X											
Fort Worth, Tex.	X	X	X	X	X	X	X	X		X			
Walker County (LaFayette), Ga.	X	X	X	X	X	X	X	X	X	X			X
Lakewood, N.J.	X	X			X	X	X	X					
Los Angeles County (El Monte), Calif.	X	X											
Newark, N.J.	X	X											
Santa Fe, N. Mex.‡	X	X			X								
Shawnee, Okla.§	X	X	X		X			X					
Vincennes, Ind.	X	X	X	X	X			X		X			
Hoonah, Alas.†		X											
Lincoln, Nebr.		X											
Pike County (Pikeville), Ky.	X	X											
Wichita, Kans.	X	X			X			X					
GEORGE PEABODY COLLEGE FOR TEACHERS													
Ft. Yates, N. Dak.	X	X	X	X									
BANK STREET COLLEGE OF EDUCATION													
Boulder, Colo.	X	X											
Brattleboro, Vt.	X	X	X	X	X	X	X	X					
Cambridge, Mass.	X	X											
Fall River, Mass.	X	X											
Huntsville, Ala.	X	X											
New York City 16, PS-243K, N.Y.§	X	X	X	X	X		X	X					
Philadelphia II, Pa.	X	X	X	X	X	X	X	X		X			

LIST OF PROJECTS AND DATA COLLECTION ACTIVITIES (continued)

Sponsor and Project Location	Program Review		Pupil Achievement Testing				Parent Interview	Teacher and Aide Questionnaire	Classroom Observation		Community Case Study		Non-Cognitive Testing
									SRI	Soar*			
	Spr 69	Spr 70	Fall 68	Spr 69	Fall 69	Spr 70	Spr 70	Spr 70	Spr 70	Spr 70	68-69	69-70	Spr 70
Rochester, N.Y	X	X	X	X	X		X	X		X			
Macon County (Tuskegee), Ala.	X	X	X	X	X	X	X	X	X	X			X
Wilmington, Del.	X	X			X		X	X					
Elmira, N.Y.†		X											
New Haven (Hamden), Conn.	X	X											
Plattsburgh, N.Y.		X			X			X					
UNIVERSITY OF GEORGIA													
McCormick County (Greenwood), S.C.	X	X			X		X	X					
Gulfport, Miss.	X	X			X			X					
Pickens County (Jasper), Ga.	X	X	X	X	X		X	X					
Guilford County (Greensboro), N.C.†		X											
Lee County (Jonesville), Va.		X											
Martins Ferry, O.		X											
UNIVERSITY OF OREGON													
Dayton, O.	X	X											
DeKalb County (Smithville), Tenn.	X	X											
East St. Louis, Ill.	X	X	X	X	X	X	X	X	X	X			X
Grand Rapids, Mich.	X	X			X		X	X					
Todd County (Mission), S. Dak.	X	X											
New York City, PS-137K, N.Y.	X	X	X	X	X		X	X					

LIST OF PROJECTS AND DATA COLLECTION ACTIVITIES (continued)

Sponsor and Project Location	Program Review		Pupil Achievement Testing				Parent Interview	Teacher and Aide Questionnaire	Classroom Observation		Community Case Study		Non-Cognitive Testing
									SRI	Soar*			
	Spr 69	Spr 70	Fall 68	Spr 69	Fall 69	Spr 70	Spr 70	Spr 70	Spr 70	Spr 70	68-69	69-70	Spr 70
Racine, Wis.	X	X	X	X	X	X	X	X		X			
Rosebud, S. Dak.	X	X											
West Iron County (Stambaugh), Mich.	X	X											
Tupelo, Miss.	X	X			X	X	X	X					X
Uvalde, Tex.	X	X			X			X		X			
Washington I (Nichols Ave.), D.C.	X		X	X									
Las Vegas, N. Mex.†	X	X											
Chicago I (Ogden School), Ill.	X	X											
Dimmitt, Tex.		X											
Flint, Mich.		X			X		X	X					
Flippin, Ark.		X											
Providence, R.I.§	X	X	X										
Williamsburg County (Kingstree), S.C.		X			X			X					
UNIVERSITY OF KANSAS													
New York City 12, PS-77X, N.Y.	X	X	X	X	X		X	X					
Oraibi, Ariz.	X	X	X	X	X			X					
Philadelphia VI, Pa.	X	X	X	X	X	X	X	X					
New Madrid County (Portageville), Mo.	X	X	X	X	X	X	X	X	X				X
Trenton, N.J.‡	X	X			X								

LIST OF PROJECTS AND DATA COLLECTION ACTIVITIES (continued)

Sponsor and Project Location	Program Review		Pupil Achievement Testing				Parent Interview	Teacher and Aide Questionnaire	Classroom Observation SRI	Classroom Observation Soar*	Community Case Study		Non-Cognitive Testing
	Spr 69	Spr 70	Fall 68	Spr 69	Fall 69	Spr 70	Spr 70	Spr 70	Spr 70	Spr 70	68-69	69-70	Spr 70
Kansas City I, Mo.†		X			X		X	X					
Louisville, Ky.		X			X			X					
Meridian Community (Mounds), Ill.		X			X			X					
Northern Cheyenne (Hardin), Mont.		X			X			X					
Pittsfield, Mass.		X											
Waukegan, Ill.‡		X			X								
Indianapolis, Ind.		X											
HIGH/SCOPE EDUCATIONAL RESEARCH FOUNDATION													
Leflore County (Greenwood), Miss.	X	X	X	X	X	X	X	X					
Okaloosa County (Ft. Walton Beach), Fla.	X	X	X	X	X	X	X	X	X				
New York City 6, PS-92M, N.Y.§	X	X	X	X	X		X	X					
Central Ozark (Mountain Grove), Mo.†		X			X			X					
Chicago V, Ill.		X			X		X	X					
UNIVERSITY OF FLORIDA													
Duval County (Jacksonville), Fla.	X	X	X	X	X	X	X	X	X	X			
Jonesboro, Ark.	X	X	X	X	X		X	X		X			
Lac du Flambeau, Wis.	X	X											
Philadelphia V, Pa.	X	X	X	X	X	X	X	X		X			
Richmond, Va.	X	X											

LIST OF PROJECTS AND DATA COLLECTION ACTIVITIES (continued)

Sponsor and Project Location	Program Review		Pupil Achievement Testing				Parent Interview	Teacher and Aide Questionnaire	Classroom Observation		Community Case Study		Non-Cognitive Testing
									SRI	Soar*			
	Spr 69	Spr 70	Fall 68	Spr 69	Fall 69	Spr 70	Spr 70	Spr 70	Spr 70	Spr 70	68-69	69-70	Spr 70
Yakima, Wash.	X	X											
Chattanooga, Tenn.†	X	X			X	X	X	X					X
Fairfield County (Winnsboro), S.C.		X											
Hillsborough County (Tampa), Fla.	X	X			X		X	X					
Houston, Tex.		X											
Lawrenceburg, Ind.	X	X											
EDUCATION DEVELOPMENT CENTER													
Burlington, Vt.	X	X	X	X	X			X		X			
Laurel, Del.	X	X	X	X	X	X	X	X		X			
Philadelphia IV, Pa.	X	X	X	X	X	X	X	X		X			
Lackawanna County (Scranton), Pa.	X	X											
Washington II (Morgan Community School), D.C.	X	X	X	X	X		X	X					
Paterson, N.J.†‡		X			X								
Rosebud, Tex.		X											
Johnston County (Smithfield), N.C.		X			X		X	X					
Chicago VI (CAA), Ill.		X			X		X	X					

LIST OF PROJECTS AND DATA COLLECTION ACTIVITIES (continued)

Sponsor and Project Location	Program Review		Pupil Achievement Testing				Parent Interview	Teacher and Aide Questionnaire	Classroom Observation		Community Case Study		Non-Cognitive Testing
									SRI	Soar*			
	Spr 69	Spr 70	Fall 68	Spr 69	Fall 69	Spr 70	Spr 70	Spr 70	Spr 70	Spr 70	68-69	69-70	Spr 70
UNIVERSITY OF PITTSBURGH													
Randolph County (Elkins), W. Va.	X	X	X	X	X	X	X	X					
Pittsburgh (Frick School), Pa.†§			X	X									
Clinton County (Lock Haven), Pa.		X											
Montevideo, Minn.		X			X		X	X					
NEW YORK UNIVERSITY													
Atlanta, Ga.	X	X	X	X	X	X	X	X		X			
New York City 5, PS-76M, N.Y.	X	X	X	X	X		X	X		X			
SOUTHWEST EDUCATIONAL DEVELOPMENT LABORATORY													
Philadelphia I, Pa.	X	X	X	X	X	X	X	X					
Tulare County (Tulare), Calif.	X	X	X	X	X	X	X	X					
St. Martin Parish, La.†		X			X		X	X				X	
San Diego, Tex.		X											
PARENT IMPLEMENTATION													
Roxbury Community School (Dorchester), Mass.	X	X	X	X	X		X	X					
East St. Louis, Ill.	(see University of Oregon)												

LIST OF PROJECTS AND DATA COLLECTION ACTIVITIES (continued)

Sponsor and Project Location	Program Review		Pupil Achievement Testing				Parent Interview	Teacher and Aide Questionnaire	Classroom Observation		Community Case Study		Non-Cognitive Testing
									SRI	Soar*			
	Spr 69	Spr 70	Fall 68	Spr 69	Fall 69	Spr 70	Spr 70	Spr 70	Spr 70	Spr 70	68-69	69-70	Spr 70
Greeley, Colo.	X	X	X	X	X			X					
Philadelphia III, Pa.	X	X	X	X	X	X	X	X					
Pulaski County (Little Rock), Ark.	X	X	X	X	X		X	X			X	X	
Rough Rock (Chinle), Ariz.	X	X											
Washington II, (Morgan Community School), D.C.	(see Education Development Center)												
Flint, Mich.†	(see University of Oregon)												
East Harlem Block Schools, Inc. N.Y.		X			X		X	X					
Highland Park Free School (Roxbury), Mass.		X			X		X	X					
UNDECIDED													
Wood County (Marshfield), Wis.													
HAMPTON INSTITUTE													
Bradley County (Cleveland), Tenn.		X											
McDowell County (War), W. Va.		X			X		X	X				X	

LIST OF PROJECTS AND DATA COLLECTION ACTIVITIES (continued)

Sponsor and Project Location	Program Review		Pupil Achievement Testing				Parent Interview	Teacher and Aide Questionnaire	Classroom Observation		Community Case Study		Non-Cognitive Testing
	Spr 69	Spr 70	Fall 68	Spr 69	Fall 69	Spr 70	Spr 70	Spr 70	SRI Spr 70	Soar* Spr 70	68-69	69-70	Spr 70
NORTHEASTERN ILLINOIS STATE COLLEGE													
Akron, O.		X			X		X	X					
Topeka, Kans.		X											
Chicago II, Ill.		X			X			X					
Chicago III, Ill.		X			X			X					
Chicago IV, Ill.		X			X			X					
STATE COLLEGE OF ARKANSAS													
Cherokee, N.C.	X	X			X		X	X					
Daviess County (Owensboro), Ky.		X											
Natchitoches Parish, La.		X			X	X		X					
RESPONSIVE ENVIRONMENTS CORPORATION													
Kansas City II, Mo.		X			X		X	X					
SOUTHERN UNIVERSITY AND A&M COLLEGE													
Davidson County (Nashville), Tenn.		X			X		X	X					
New York City, PS-133M, N.Y.	X	X	X	X	X		X	X					

LIST OF PROJECTS AND DATA COLLECTION ACTIVITIES (concluded)

Sponsor and Project Location	Program Review		Pupil Achievement Testing**				Parent Interview	Teacher and Aide Questionnaire	Classroom Obser-vation		Com-munity Case Study		Non-Cognitive Testing
	Spr 69	Spr 70	Fall 68	Spr 69	Fall 69	Spr 70	Spr 70	Spr 70	SRI Spr 70	Soar* Spr 70	68-69	69-70	Spr 70
CALIFORNIA STATE DEPARTMENT OF EDUCATION													
Los Angeles City I, Calif.		X											
Los Angeles City II, Calif.		X											
Los Angeles City III, Calif.		X			X		X	X					
Los Angeles City IV, Calif.		X											
East Palo Alto, Calif.		X											
Lamont, Calif.		X			X			X					
Oakland, Calif.		X											
San Jose, Calif.		X			X		X	X				X	
Winterhaven (San Pasqual), Calif.		X											
TOTAL	105	159	53	50	95	31	65	89	7	20	3	6	8

---

* Observation by Dr. Robert Soar, University of Florida.

‡ Not included in SRI basic study sample in 1969-70.

† Projects listed above the line were associated with the indicated sponsor during 1968-69. Projects listed below the line were added to the indicated sponsor at a later date; some of these were new to Follow Through in 1969-70, others shifted sponsorship in 1969-70.

§ Not included in SRI basic study sample in 1968-69.

** The Pupil Achievement Testing total shown on the last line for Fall 1968 includes six sites not in the basic study sample, for Spring 1969 it includes three sites not in that sample, and for Fall 1969 six sites.

Appendix 3

LIST OF SPONSORS AND ADDRESSES

Appendix 3

LIST OF SPONSORS AND ADDRESSES

A list of program sponsors for the 1968-70 period, with their current addresses, is provided in this appendix. An indication is given of whether the program was at a developmental stage or a more matured stage ("first cohort") in each school year within the period.

Program Sponsors and Addresses	Developmental 1968-69	Developmental 1969-70	First Cohort 1969-70
Approaches based on IPI and primary education project Dr. Lauren Resnick and Dr. Warren Shepler Learning Research and Development Center University of Pittsburgh 160 N. Craig Street Pittsburgh, Pa. 15213	X		X
Bank Street College of Education approach Mrs. Elizabeth Gilkeson Bank Street College of Education 216 W. 14th Street New York, N.Y. 10011	X		X
Behavior analysis approach Dr. Donald Bushell, Jr. Support and Development Center for Follow Through Department of Human Development University of Kansas Lawrence, Kans. 66044	X		X
Behavior-oriented prescriptive teaching approach Dr. Walter Hodges Southwest Center for Early Childhood Personnel Development State College of Arkansas Conway, Ark. 72032		X	

Program Sponsors and Addresses	Develop-mental 1968-69	Develop-mental 1969-70	First Cohort 1969-70
California process model Mrs. Ruth Love Holloway Division of Compensatory Education Bureau of Program Development California State Department of Education 721 Capitol Mall Sacramento, Calif. 95814		X	
Cognitively oriented curriculum model Dr. David Weikart High/Scope Educational Research Foundation 125 N. Huron Street Ypsilanti, Mich. 48197	X		X
Cultural linguistic approach Dr. Nancy Arnez Center for Inner City Studies Northeastern Illinois State College 700 E. Oakwood Boulevard Chicago, Ill. 60653		X	
Education Development Center approach Mr. Frank Watson Education Development Center 55 Chapel Street Newton, Mass. 02160	X		X
Florida parent education model Dr. Ira Gordon Florida Educational Research and Development Council College of Education University of Florida Gainesville, Fla. 32601	X		X
Hampton Institute nongraded model Dr. Mary Christian Department of Elementary Education Hampton Institute Hampton, Va. 23368		X	

Program Sponsors and Addresses	Developmental 1968-69	Developmental 1969-70	First Cohort 1969-70
Home-school partnership: a motivational approach Dr. Edward Johnson Southern University and A&M College Southern Branch Post Office Baton Rouge, La. 70813		X	
Interdependent learner model Dr. Lassar Gotkin Institute for Developmental Studies School of Education New York University Washington Square New York, N.Y. 10003	X		X
Language development-bilingual education approach Mr. Juan Lujan Southwest Educational Development Laboratory Suite 550, Commodore Perry Hotel Austin, Texas 78701	X	X	
Mathemagenic activities program Dr. Charles Smock Division of Educational Research School of Education University of Georgia Athens, Ga. 30601	X	X	
New school approach Dr. Vito Perrone New School of Behavioral Sciences in Education* University of North Dakota Grand Forks, N. Dak. 58201			
Parent implementation approach Mr. Preston Wilcox Afram Associates, Inc.* 103 E. 125th Street New York, N.Y. 10035			

Program Sponsors and Addresses	Developmental 1968-69	Developmental 1969-70	First Cohort 1969-70
Responsive environment approach Dr. Glen Nimnicht Far West Laboratory for Educational Research and Development 1 Garden Circle Berkeley, Calif. 94705	X		X
Responsive Environments Corporation model Mrs. Ruthe J. Farmer Responsive Environments Corporation 1025 Connecticut Avenue, N.W. Washington, D.C. 20036		X	
Systematic use of behavioral principles program Mr. Siegfried Engelmann Dr. Wesley Becker Department of Special Education Follow Through Project University of Oregon Eugene, Ore. 97403	X		X
Tucson early education model Dr. Joseph Fillerup Arizona Center for Early Childhood Education University of Arizona 1515 E. First Street Tucson, Ariz. 85719	X		X

---

* New sponsor, 1970-71.

Appendix 4

PUPIL ACHIEVEMENT TEST BATTERY

Appendix 4

PUPIL ACHIEVEMENT TEST BATTERY

The Pupil Achievement test battery was administered four times during the first two years of the SRI evaluation, in the Fall and Spring of each academic year. After each administration, the test battery has been refined and augmented in light of the results.

Early in the development of the achievement test battery, each sponsor was interviewed in an attempt to prepare descriptions of the theories underlying sponsors' models, time-phased objectives held for the instructional procedures and techniques, tests and other measurement procedures that sponsors expected to use, and other similar items.

Shortly after visits with sponsors, a major planning conference was convened. In attendance were most sponsors or their delegated representatives, OE staff, SRI staff, and other interested persons. A substantial portion of the conference was devoted to problems of measurement and discussion of procedures considered appropriate by the sponsors. Out of these discussions evolved a strategy in which a core of measures that met with general agreement among all sponsors would be augmented by additional measures derived from tests suggested directly by each sponsor.

The 1968-69 Test Battery

Nine existing tests were selected to comprise a pool of core test items. These tests were:

1. Lee-Clark Reading Readiness Test
2. Metropolitan Readiness Test
3. Preschool Inventory
4. Six tests--Pre-Mathematics, Pre-Science, Prepositions, Shape Names, Alphabet, and Numerals--from the Early Childhood Inventories Project of the Institute for Developmental Studies, New York University.

The nine tests were stratified according to subtests or parts defined by the test publishers or makers. Three versions, later identified as the A, B, and C forms, were drawn from the pool of items in these nine tests and were combined into five booklets for classroom administration. The rationale for creating three forms of the basic battery was to provide broad coverage without exposing any one pupil to excessive testing. Collectively, the three versions of five booklets contained 334 different items. Forms A, B, and C each contained a total of 128 items; 34 items appeared in some pair of forms (A-B, A-C, B-C) or in all three forms (A-B-C).

In the actual administration of the basic battery, pupils were assigned randomly to an A, B, or C group, denoting the form of the battery to be administered to them. All but one of the booklets were administered to groups of seven pupils at a time or, if conditions permitted, to as many as nine pupils. The remaining booklet required individual administration. Testing was conducted in each classroom by a tester paid and trained by SRI. Each tester, in turn, had either two or three aides to assist him.

Mid-year Revisions of the 1968-69 Battery

In planning for testing in the Fall of the 1968-69 school year, it was felt that the basic (core test) battery would be suitable for both kindergarten and first grade pupils. The fall test data, however, indicated that the basic battery did not provide adequate range for first graders. This was particularly true in Booklet 1 (Lee-Clark), Booklet 3 (NYU: Pre-Mathematics, Pre-Science, Prepositions) and Booklet 5 (Preschool Inventory), and to a lesser extent in Booklet 4 (NYU: Alphabet, Numerals, Shape Names).

Booklets 1 and 3 were dropped from the first grade battery for spring administration. Booklet 5 was retained despite indications of constricted range, to make it possible to develop normative data for Follow Through pupils on the Preschool Inventory. In place of Booklets 1 and 3, the Word Reading and Paragraph Meaning subtests from the Primary I version of the Stanford Achievement Test, Form Y, were substituted. Both these latter tests were administered in their entirety (not split into separate forms) to complete first grade classes.

Development of Supplementary Battery

As mentioned above, a strategy for obtaining measures responsive to the particular objectives of individual sponsors called for developing tests that contained items submitted by each sponsor. Each program sponsor was asked to contribute test items that he considered valid for the program he advocated. In this context, "item" was defined generically to include any observable indicator of intended change. Thus, a sponsor could submit "items" for which the appropriate mode of measurement might be direct observation of operating classrooms or interviews with parents or school staff. Specification of a desired social act by a pupil in a naturalistic situation would, therefore, be as properly considered an "item" as would a question about symbol discrimination in a paper-pencil test.

Items were not obtained from all sponsors; however, a total of approximately 1,500 items were submitted by nine of the sponsors. Items were classified according to content and sorted into those suitable for administration as classroom test items and those better suited for use in classroom observation schedules or interviews with instructional staff or parents. This sorting left approximately 1,000 items in the test item pool. Of this number, approximately 40 percent were excluded for one or more of the following reasons: (1) the question duplicated very nearly or exactly some question already embodied in the basic battery, (2) use of the question required training in individual testing, e.g., for the Wechsler Preschool and Primary Scale of Intelligence, or (3) administration demanded the use of elaborate materials or idiosyncratic procedures that would be too cumbersome for use without close professional supervision. As had been the pattern in developing the basic battery, the remaining 600-odd items were stratified by content and sponsor, and three unique forms or versions were constructed by randomly allocating equal numbers of items from each cell to each form.

The tests were pretested with Follow Through and non-Follow Through kindergarteners and first graders in a San Diego school excluded from the evaluation sample. Following analyses of these trials, some alterations were made in instructions for administration and a few items were reassigned to increase form-to-form similarity on test difficulty.

The version of the supplementary battery produced in quantity for use in the Spring testing was embodied in two booklets, each with three forms (A, B, and C). One booklet (identified as Booklet 6) contained items that were administered to groups of six children at a time. The other (Booklet 7) contained questions for individual administration.

Item Analyses of 1968-69 Tests

A variety of analyses were performed on results from Fall and Spring use of the basic and supplementary batteries to guide revision and improvement of the test instruments for 1969-70. As the Fall 1968 results had suggested earlier, a major deficiency in the basic battery was the limitation in range. This was true to some extent for kindergarten but was especially marked at the first grade level. Item-by-item examination of the battery showed many individual items, and within some tests, whole subtests, for which evidences of "topping out" were clear. After reviewing intercorrelations and other indicators of item characteristics, it was decided that the most important criterion for item exclusion was restriction in the upper range. Accordingly, item difficulty distributions were prepared for classrooms grouped according to sponsorship.* If an item displayed an average difficulty above .75 for classroom groups from four or more sponsors, the item was rejected. If a substantial number of items from a subtest met this criterion, the entire subtest was rejected.

Validity of the 1968-69 Test Battery

It was recognized that the tests assembled or developed for use during 1968-69 were not considered equally valid by all appropriate judges of curricular validity, such as sponsors and teachers. Counsel from sponsors was sought and valued, of course, in the design of the battery, but fallible judgments, second thoughts, and changes in program design were all possible influences on the curricular validity of the tests as actually administered.

To help counteract these influences, a procedure was developed for obtaining post factum estimates of the curricular validity of all the items, subtests, and tests used in both the Fall and Spring. The materials used in this procedure were distributed in early May 1969. The central instrument was basically a questionnaire that asked, with reference to each item, subtest, and test, at what point in time a specified fraction of pupils in the program were likely to have received instruction that would permit them to make a reasoned response--i.e., not a guess--to each test question. A procedure generally similar to this had been used with encouraging results by SRI staff in two previous projects.

---

* Item difficulty is defined as the proportion of correct responses.

The judgments called for by such a procedure are complex, for at least three considerations are involved: (1) probability of exposure to requisite instruction, (2) the proportions of students to whom the probability estimates refer, and (3) assumptions about the time frame within which the estimates apply.

In the application to the Follow Through study, the procedure was simplified. Three groups were asked to assist by responding to the questionnaire: (1) program sponsors, (2) samples of classroom teachers (both Follow Through and non-Follow Through), and (3) Follow Through coordinators and curriculum specialists. Three things were sought: (1) a basis for differentially scoring subtests and tests within the batteries (potentially, many "weighting keys" could be derived), (2) an indication of variability within a program regarding the salience of instructional objectives and their sequencing, and (3) an additional basis for estimating the commonality and diversity of instructional objectives among programs.

A second portion of the questionnaire solicited suggestions for closing the gaps in the batteries--that is, identifying important curricular objectives amenable to test measurement that were not accommodated in the tests used. Many of these suggestions were influential in shaping revisions for 1969-70.

The 1969-70 Test Battery

The achievement test battery used in both the Fall and Spring of 1969-70 was a refinement and an extension of the battery used the preceding year. For example, in 1968-69, only kindergarten and first grade pupils were tested. In 1969-70, pupils from kindergarten through the fourth grade were tested, thus necessitating five separate batteries, i.e., kindergarten and entering first, non-entering first, second, third, and fourth grades.

The primary changes in the substance of the battery were to (1) cull items, subtests, and whole tests from the 1968-69 battery that had shown "ceiling" effects or other weaknesses and (2) add items, subtests, and tests to assure a more balanced coverage of quantitative, verbal, symbol recognition, and other academically relevant skills.

The various batteries were comprised of items and subtests drawn from the following:

1. Lee-Clark Reading Readiness Test
2. Metropolitan Readiness Test
3. Early Childhood Inventories Project, New York University
4. Preschool Inventory
5. Stanford Achievement Test
6. Metropolitan Achievement Test
7. The Comprehensive Tests of Basic Skills
8. Wide Range Achievement Test
9. Individual items contributed by sponsors

Tests were administered to the fourth grade to provide a basis for future comparison. Fourth graders in 1969-70 were the last fourth grade children that could not have experienced either Head Start or Follow Through. It is planned to test fourth graders in the future who have "graduated" from Follow Through and make comparisons between the two sets of data.

Although elements of the 1969-70 achievement battery included questions dealing with pupils' attitudes and study skills, most of the pupil measures obtained in this battery have assessed performance in traditionally accepted areas of academic achievement, such as language and computational skills. A detailed breakdown of items by grade level and item category is provided in Table 4-1.

Table 4-1

ITEM DISTRIBUTION FOR 1969-70 ACHIEVEMENT TEST BATTERY, BY WRAT/NON-WRAT* COMPONENTS FOR EACH GRADE LEVEL TESTED

	Grade Level†							
	K & E-1		NE-1		2		3	
Item Category	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Non-WRAT items‡								
Verbal/linguistic	41	28.1%	52	26.7%	70	31.5%	47	21.0%
Quantitative/computational	21	14.4	30	15.4	45	20.3	52	23.2
Perceptual/motor	0	0.0	11	5.6	11	5.0	5	2.2
Subtotal	62	42.5%	93	47.7%	126	56.8%	104	46.4%
WRAT items‡								
Verbal/linguistic	42	28.8	56	28.7	71	32.0	101	45.1
Quantitative/computational	24	16.4	28	14.4	16	7.2	19	8.5
Perceptual/motor§	18	12.3	18	9.2	9	4.1	0	0.0
Subtotal	84	57.5%	102	52.3%	96	43.2%	120	53.6%
Summary								
Verbal/linguistic	83	56.8	108	55.4	141	63.5	148	66.1
Quantitative/computational	45	30.8	58	29.7	61	27.5	71	31.7
Perceptual/motor	18	12.3	29	14.9	20	9.0	5	2.2
Total	146	100.0%	195	100.0%	222	100.0%	224	100.0%

---

* WRAT = Wide Range Achievement Test.

† K = Kindergarten
E-1 = Entering first grade
NE-1 = Non-entering first grade
2 = Second grade
3 = Third grade

‡

Sources of Items or Subtests	Administered to Grades
Lee-Clark Reading Readiness Test	K, E-1
NYU Early Childhood Inventories (Alphabet, Numerals)	K, E-1
Preschool Inventory	K, E-1
Metropolitan Readiness Test (Form A)	NE-1, 2
Stanford Achievement Test (Primary I, Form Y: Word Reading)	2
Metropolitan Achievement Test (Primary II, Form A: Arithmetic Computation)	2
Comprehensive Tests of Basic Skills (Form Q, Level 1):	
Reading Vocabulary and Arithmetic Computation	3, 4
Others	4
Wide Range Achievement Test (selected items or subtests)	All grades
Achievement Items from Sponsors	1, 2, 3

§ WRAT items calling for copying marks are classified as perceptual/motor rather than as a sub-part of the spelling (linguistic) set.

Appendix 5

NON-COGNITIVE TEST BATTERY

Appendix 5

NON-COGNITIVE TEST BATTERY

A central concern of the SRI project staff, of Follow Through program sponsors, of OE/Follow Through staff, and consultants to Follow Through and to SRI throughout the history of the project has been the inadequacy of measures appropriate to the assessment of non-cognitive changes in a program characterized by such large numbers of children. Development of instruments for measuring non-cognitive variables was discussed at several conferences.

In the fall of 1969, a non-cognitive subcommittee (Drs. Edward Barnes, Judy Crooks, Eleanor Maccoby and Ray Rhine) was appointed to stimulate and guide the selection, adaptation and development of non-cognitive instruments that would reflect the goals of Follow Through stakeholders, particularly the program sponsors and the participating parents and children.

Sponsor Objectives

The various Follow Through programs differed markedly in their relative emphasis on non-cognitive measurement, but all sponsors recognized that the non-cognitive growth and development of children may be significantly influenced by the quality of their educational experience. Information concerning sponsor objectives was derived through several procedures. SRI staff examined sponsor statements made in program descriptions and in various Follow Through review and planning conferences. Joint Fellows, the representatives of the sponsors, were invited to state the current non-cognitive objectives of their programs. SRI staff also interviewed sponsors on program objectives, including non-cognitive objectives. Under the auspices of the Social Science Research Council, Drs. Eleanor Maccoby and Miriam Zellner interviewed sponsors on program assumptions and objectives.

The program objectives collected through these procedures clustered into the following general measurement areas: attitudes toward school, task orientation skills, curiosity and exploration, autonomy, self-esteem, school fearfulness, and locus of control.

Ethnic Minorities' Objectives

Ethnic minority concerns and recommendations on non-cognitive measurement emphasized that evaluation of pupil change must be closely tied to evaluation on institutional change. The following changes in educational institutions were recommended: the curriculum and teaching strategies should be consonant with the culturally unique learning, incentive, and motivational styles of the ethnic minority pupils; parents should have greater participation (and power) in decision-making; and administrators and teachers from ethnic minority groups should be more adquately represented in Follow Through.

Ethnic minority representatives criticized existing instruments because they usually reflected an Anglo middle-class value orientation. They recommended the following changes in pupil measures: more research must be directed toward understanding the nature of values and non-cognitive functioning within particular ethnic cultures; the operational definition of non-cognitive constructs should be consistent with the values of ethnic minority communities; verbal and pictorial test stimuli must be appropriate to the prior learning experience of ethnic minority pupils; and whenever possible, tests should be administered to ethnic minority children by persons from the same ethnic group.

Ethnic minority representatives opposed educational practices and instruments that required or implied that minority pupils should adopt Anglo middle-class values and behaviors at the expense of losing or rejecting their identity with their own ethnic group. They contended that ethnic (racial, cultural) identity (pride, self-image, awareness) should be defined and evaluated as a relevant educational goal. Several persons suggested that ethnic identity may be causally related to the ethnic minority child's level of academic achievement, self-concept, self-esteem, values, and feelings of efficacy and control over the consequences of his behavior.

During an OE-SRI meeting in Menlo Park in July 1970, there were initial discussions of subcontracting with certain ethnic minority consultants for the purpose of constructing instruments reflecting the particular goals and aspirations of the minorities. Two preliminary proposals for developing such instruments have been submitted to OE by ethnic minority behavioral scientists.

Identification of Instruments

Establishing curricular validity for non-cognitive objectives is difficult inasmuch as specific non-cognitive curricula rarely exist in school systems. Non-cognitive objectives are frequently stated in the form of highly generalized labels such as "positive attitudes," "autonomy," "self-esteem," and so forth. Each of these expressions represents a packaging of broad areas of psychological functioning in inefficient, loose, and imprecise terms. Moreover, these expressions are not well defined in terms of measurement operations. Thus, the task of identifying instruments acceptable for program evaluation is difficult.

Several procedures were employed to identify instruments for non-cognitive evaluation. Sponsors and the Joint Fellows were invited to provide copies of all non-cognitive instruments that they used for program evaluation from 1968 to 1970 and to suggest other non-cognitive instruments appropriate for evaluation. Several consulting researchers in the areas of child development and early childhood education recommended non-cognitive instruments. The SRI staff conducted a literature search to identify appropriate instruments.

Review and Selection of Instruments

Each instrument was assessed for its relevance to Follow Through and for the quality of its methodological characteristics. The eight instruments employed in the Spring 1970 pilot study (see below) were selected through review procedures that involved members of the non-cognitive subcommittee, SRI consultants (including ethnic minority representatives), the Joint Fellows and their sponsors, and SRI staff. Several instruments were recommended for field testing in Oakland and San Jose. The field testing of instruments, the final selection of instruments included in the Spring 1970 pilot study, and the training of the pilot study testing teams occurred from February 1 to April 15, 1970.

The Spring 1970 Pilot Study

The eight selected instruments were administered in the following eight communities: Chattanooga, Duluth, East St. Louis, LaFayette, Miami, Portageville, Tupelo and Tuskegee. Three instruments (Ethnic Pictures, Response to Social Influence, and Task Performance Skills) were individually administered to 12 pre-selected pupils (6 boys and 6 girls) in each classroom of kindergarten through grade three.

Four instruments (Test Anxiety Scale, Intellectual Achievement Responsibility Scale, In My Classroom, and the Picture Motivation Scale) were administered to the entire class in selected classrooms of grades two and three. The Classroom Behavior Inventory was a teacher rating instrument.

A total of 45 classrooms and 845 pupils were included in the pilot study data collection. Some 95% of pupils designated for individual testing were tested, and over 90% of the teacher ratings were completed. School personnel were cooperative and generally enthusiastic about including non-cognitive instruments in the Follow Through evaluation. The instrument administration procedures were generally effective, but certain modifications were indicated on the basis of experience in the pilot study.

Data Analyses

To determine the operating characteristics of each instrument, the following descriptive data analyses were performed for each: means and standard deviations, reliability estimates, and standard errors of measurement. Construct validity was assessed for each instrument and separate multivariate analyses of covariance were performed for each of the samples for kindergarten and grade one, for grades two and three, and for the total sample, treating the pupil's age as the covariate.

Results

The pilot study results suggested that several instruments were sensitive to systematic program differences for grades two and three and, to a lesser extent, for kindergarten and grade one. The pattern of results may reflect the greater difficulties commonly acknowledged in obtaining reliable measures at earlier ages, or the lesser stability of program effects at the earlier ages. Reliability estimates for the group-administered instruments among poor children compared very favorably with previous estimates obtained for middle-class pupils. Overall, the number of significant main effects greatly exceeded chance expectancy. The differences on the group-administered tests suggest the possibility of corresponding behavioral differences that could be investigated in future exploratory and developmental studies.

Appendix 6

PARENT INTERVIEW SURVEY

Appendix 6

PARENT INTERVIEW SURVEY

The parent interview (PI) survey was developed around four major purposes:

(1) To examine the comparability of Follow Through and non-Follow Through children, so that any differences found to be significant could be investigated or more comparable subgroups of children could be selected for inclusion in the evaluation.

(2) To determine the effectiveness of Follow Through for different demographic subgroups, once comparability between Follow Through and non-Follow Through children is established or improved. The parents are one of the best sources of information on their own education, income, and occupation. Such data can help determine whether it is the poorest children, with the least educated parents, who are being most effectively reached by Follow Through or whether, on the contrary, Follow Through works best for those children who already have more economic and educational advantages at home.

(3) To investigate parent attitudes and actions as mediators of the effectiveness of school programs. The amount of support given in the home to the child's academic activities, the "life style" of the family, and the parents' own feelings of self-esteem and effectiveness in dealing with schools are strongly emphasized in some Follow Through programs as factors that may facilitiate a child's readiness to learn. Children can be grouped according to such factors and the groups compared for academic achievement.

(4) To measure parent awareness of, participation in, and satisfaction with Follow Through. Although there is variation in the degree of emphasis on parent involvement in the different sponsor approaches, the Follow Through program as a whole places great importance on parent participation. The extent to which this goal is being reached can be judged according to information best obtained from the parents themselves on their attitudes and actions related to Follow Through and other school programs.

Selection of Respondents

To provide the basic and interpretive data needed to fulfill the above purposes for the 1969-70 school year, over 16,000 target families were selected in 49 communities with 65 Follow Through projects under 20 sponsors. The names were supplied to the National Opinion Research Center (NORC), the subcontractor that did the interviewing. NORC was able to locate 15,284 (95%) of the target families, and of those located, to complete a parent interview with 14,833 (97%). The sample included most of the projects that had been selected for the 1968-69 SRI study sample.

Although a total of 14,833 home interviews were completed, 775 could not be correlated with individual pupil measures. Achievement test data were not obtained at all for these cases or, if obtained, could not be matched with parent interview data in time to be used in the present analyses.

Table 6-1 shows the sample of 14,058 (14,833 less 775) by grade level of the child and by type of interview form used (the "long" or "short" form described below). For present reporting purposes, the 3,685 parents of grade four pupils, interviewed to provide comparisons with present Follow Through children when they reach grade four, have been excluded. Thus, the final "effective" sample in the present analyses totals 10,373.

Development of Interview Forms

The long form of the interview was jointly developed by OE, SRI, NORC, and consultants over a period that extended from late 1968 to late 1969. Agreement was reached on the importance of the following subject areas within which the questions were formulated:

(1) Demographic characteristics

(2) General "life style" and attitudes

(3) Interest in and knowledge about Follow Through

(4) Participation in policy making with respect to educational programs.

(5) Parent contact with the school and its staff

(6) Feelings of efficacy in relation to the school

Appendix Table 6-1

NUMBER OF PARENT RESPONDENTS, BY CHILD'S GRADE LEVEL AND INTERVIEW FORM COMPLETED

	Follow Through			Non-Follow Through			Total		
Grade	Long Form	Short Form	Total	Long Form	Short Form	Total	Long Form	Short Form	Total
Kinder.	2,084	1,956	4,040	1,072	1,048	2,120	3,156	3,004	6,160
Ent. 1	941	751	1,692	615	507	1,122	1,556	1,258	2,814
Non-Ent. 1	427	388	815	106	100	206	533	488	1,021
2	149	130	279	50	49	99	199	179	378
4	--	--	--	--	3,685	3,685	--	3,685	3,685*
Total	3,601	3,225	6,826	1,843	5,389	7,232	5,444	8,614	14,058*

---

* For present analytical purposes, the 3,685 parents of grade four pupils have been excluded, leaving a final, effective sample of 10,373.

(7) Feelings of being able to control one's life

(8) Support and guidance of child with respect to educational programs

(9) Extent of educationally relevant stimulation in the home environment

(10) Aspirations for the child's future.

The short form was used to extend the base for two main types of data--demographic, and parents' "life style" and attitudes toward school--so that these measures could be compared with other descriptive and evaluative information, primarily the pupil achievement scores.

Field Work

The field work was directed from NORC's New York office and conducted by NORC with close communication among NORC, OE/Follow Through, and SRI.

NORC appointed a local supervisor for each geographic location and had the responsibility for gaining entry into the community, using explicit procedures developed jointly by OE/Follow Through and SRI.

As a control on quality, NORC checked by phone or mail between 15 and 25% of the respondents to assure that the interview had taken place, the percentage varying in the different areas. The selection of interviews for this validation was random except that the first few interviews by each interviewer were validated. In addition to verifying the original interview and the answers to a few key questions in it, NORC asked some questions about the respondent's reaction to the interview. In spite of the high response rate--interviews were completed with 97 percent of the parents located --there were very few negative incidents or reactions to the survey, considering its very large size.

Data Processing

The completed interview forms were coded at NORC in accordance with specifications jointly developed by SRI and NORC. The codes for most of the open-ended questions were also jointly developed by SRI and NORC staff, at a meeting in New York. Two open-ended questions concerning the parent's "likes" and "dislikes" about Follow Through were specifically excluded from coding by NORC under its contractual time schedule. Instead, a sample of these responses was coded by SRI.

Appendix 7

TEACHER AND AIDE QUESTIONNAIRES

Appendix 7

TEACHER AND AIDE QUESTIONNAIRES

It is axiomatic that a pupil's performance on academic achievement measures is critically affected by the kind and quality of instruction he receives. The key component of the instructional setting, of course, is the teacher, who assumes multiple roles in interaction with the pupil--a guide, resource person, source of knowledge, and so on. Teachers vary in their assumptions and beliefs about the natures of the pupils, the learning process, and teaching functions. In addition, instructional settings vary according to the kind and quality of resources and materials available and the uses to which they are put.

Measuring some of the essential differences among teachers, both Follow Through and non-Follow Through, has represented an important development task in the evaluation project. One technique used was a teacher questionnaire.

The first provisional draft of a teacher questionnaire was developed in the Fall of 1968. The instrument was revised several times following both internal and external review and was administered during the Spring of 1970.

The teacher questionnaire included 131 numbered questions (some covering several items) in the following areas:

(1) Demographic information and professional background (education, training, and teaching experience)

(2) Classroom practices

(3) Availability and use of equipment and materials

(4) Educational goals for children

(5) Information and attitudes about home visits and parent participation in the classroom

(6) Knowledge about Follow Through, manner of involvement in the program, and opinions about its effectiveness

(7) General assessment of pupil progress.

A shorter (19 questions) but related questionnaire was given to classroom assistants or aides. It included:

(1) Demographic and background information

(2) Manner of becoming an aide

(3) Training

(4) Activities

(5) Opinions about Follow Through

(6) Opinions about the teacher.

Within the overall evaluation plan, information about teacher characteristics and attitudes and classroom practices derives from two complementary sources: these teacher and aide questionnaires and systematic classroom observations by outsiders. Since the latter included observations of the pupils and of their interactions with teachers and aides, a self-reporting questionnaire was employed for the teacher survey. Responses were received from approximately 90% of the Follow Through teachers and 80% of the non-Follow Through teachers in the sample. These data were obtained primarily for the purpose of exploring the relationships between teacher characteristics, attitudes and classroom practices, and pupil development.

Appendix 8

DEFINITIONS OF VARIABLES

Appendix 8

DEFINITIONS OF VARIABLES

Demographic Variables	Definition	Source Classroom Roster	Source Parent Interview Long Form	Source Parent Interview Short Form
Sex of child		X	X	X
Age of child	Month and year of birth (single item; age by quarters)	X	X	X
Preschool experience of child	Single item, recoded to 3 categories: Head Start, Head Start equivalent or both Head Start and equivalent, no preschool	X	X	
Ethnicity of child	Single item, recoded to 3 categories: black, white, other	X		
Sex of household head			X	X
Occupation of household head	What kind of work does household head usually do? (Single item, recoded to 3 levels: 1: Professional, semi-professional, farmers, farm managers, proprietors, managers and officials, clerical and kindred workers, sales 2: Craftsmen, foremen and kindred workers, operatives and kindred workers, service workers 3: Farm laborers and foremen, laborers, none, disabled, housewives		X	X

Appendix 8 (continued)

Demographic Variables	Definition	Source		
		Classroom Roster	Parent Interview	
			Long Form	Short Form
Employment status of household head	Is household head employed or unemployed and looking for work? (Single item, 3 categories: employed, looking for work, not in labor force)		X	X
Education of household head	What is highest grade in school completed? (Single item, recoded to 3 levels: High school or more, some high school, 8 years or less)		X	X
Education of spouse	What is highest grade in school completed? (Single item, recoded to 3 levels: High school or more, some high school, 8 years or less)		X	X
Family income	What was total household income for 1969? (Single item, recoded to 3 levels: $3,000 or less, $3,000-$4,999, $5,000 or more)		X	X
Family size	Single item, recoded to 3 levels: 3 or less, 4 or 5, 6 or more		X	X
Home ownership	Do you own or rent this house/apartment? (Single item, categories of "own" or "rent")		X	X

Appendix 8 (continued)

Family Life Style Variables	Definition	Source		
		Classroom Roster	Parent Interview	
			Long Form	Short Form
Imitative behavior	How often does child play school at home? How often does child play that he/she is grown up? How often does child play house? (3 items combined, recoded to 2-level variable: 1 = much, often; 2 = little, seldom)		X (all items)	X (1 item)
Parent/child mutual help	When you are working around your home, how often does child help without being asked? How often does child bring home any school work to be done at home? How often does child come to you for help on school work? (3 items combined into 2-level variable: 1 = most often; 2 = least often)		X	
Child helps father	How often does child help his/her father when he is working on some project? (Single item, recoded to 2 levels: 1 = once in a while or oftener; 2 = seldom or never)		X	X
Home reinforces school/child relationships	How often does child talk about what happens in school? How often does child bring home any work done at school? How often do you tell child that he has done good work at school? How often do you talk with child about things he has seen on TV? If child asks question you can't answer, how often do you try to find the		X (all items)	X (6 items)

Appendix 8 (continued)

Family Life Style Variables	Definition	Source		
		Classroom Roster	Parent Interview	
			Long Form	Short Form
	answer by looking in a book? How much do you talk with child at mealtime? When child has chance to choose what to do around the house, how often does he choose to look at a book or magazine? How much did you read to child before he could read? How often does child see you reading? How many different newspapers do you buy regularly? (10 items combined, recoded to 3-level variable: 1 = much, often; 3 = little, seldom, never)			
Experiences beyond the home and neighborhood	How often do you take child along when you go shopping? How often do you take child on trip out of town? How often do you visit someone who is not related to you? How often do you visit with friends who live in a different part of the city than you? (4 items combined into 3-level variable: 1 = most often; 3 = least often)		X (all items)	X (3 items)
Fate control (parent feelings about work vs. luck)	1. Sooner or later, people get what they deserve in this world - or - The sad part is, a person's true value isn't often noticed no matter how hard he tries.		X	

Appendix 8 (continued)

Family Life Style Variables	Definition	Source		
		Classroom Roster	Parent Interview	
			Long Form	Short Form
	2. If the child has studied his lessons every day, tests will not bother him very often - or - Tests often aren't related to classwork so there is no use studying.			
	3. Becoming successful is a matter of hard work, not luck - or - Becoming successful depends a lot on being in the right place at the right time.			
	4. Most people don't realize how much their lives are controlled by things that happen by accident - or - There really is no such thing as "luck."			
	5. Many times I feel that I can't do much about the things that happen to me - or - Chances and luck are not important in my life.			
	(5 paired comparison items combined into single 2-level variable: 1 = work over luck in 4 or more pairs and 2 = luck over work in 2 or more pairs.)			
Fate control (parent acceptance of fate)	1. Many of the unhappy things that happen to people are just plain bad luck - or - Many of the unhappy things that happen to people come from the mistakes they make.		X	

Appendix 8 (continued)

Family Life Style Variables	Definition	Source Classroom Roster	 Parent Interview Long Form	 Short Form
	2. I have found that what is going to happen, will happen - or - I have found that it's better to plan ahead than to just let things happen. (2 paired comparison items combined to a 2-level variable: 1 = accept fate in one or both pairs; 2 = seek to control fate in both pairs.)			
Fate control (parent confidence in plans)	When I make plans, I am sure that I can make them work - or - It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad luck anyhow. (1 paired comparison item: 1 = planning desirable; 2 = planning futile)		X	
Expectations of job success for household head	What chance does head of household have to get ahead in his job? (Single item, recoded to 2 levels: 1 = good or excellent; 2 = fair, poor, or very poor)		X	

Appendix 8 (continued)

Parent Awareness and Participation Variables	Definition	Source		
		Classroom Roster	Parent Interview	
			Long Form	Short Form
Awareness of classroom activities	Since the beginning of this school year, have you or your husband visited child's classroom while class was in session? Do you work regularly in child's classroom or elsewhere for child's school, either as a volunteer or as a paid worker? Since the beginning of this school year have you or your husband talked privately with child's teacher, i.e., in a personal visit? (3 items combined, recoded to 4-level variable: 1 = most aware; 4 = least aware)		X	
Parent/school contacts beyond the classroom	Are there any groups of parents or organizations in your community that work with the schools? Have you heard of a group called the Policy Advisory Committee? Have you or your husband talked privately with anyone other than the teacher from child's school this year, either at home or at school? (3 items combined, recoded to 2-level variable: 1 = some contact; 2 = no contact.		X	
Parent works in classroom or school (also included in "Awareness of classroom activities")	Do you work regularly in child's classroom or elsewhere for child's school, either as a volunteer or as a paid worker? (Single item, 3 categories: volunteer, paid worker, none)		X	

Appendix 8 (continued)

Parent Awareness and Participation Variables	Definition	Source		
		Classroom Roster	Parent Interview	
			Long Form	Short Form
Visits to classroom by family members	Since school started this year, how many times have you visited child's classroom? How many times did your husband go? How many times did you both go? (3 items combined, 3-level variable: 0 visits, 1-2 visits, 3 or more visits)		X	
Recency of talks between parent and teacher	How long was the last talk? (Single item, recoded to 3 categories: no talk, talk within past month, talk less recently than past month)		X	
Parent aspirations for child during school	In general, what kind of grades do you expect child to get as he goes through school? (Single item, recoded to 2 levels: 1 = excellent, above average; 2 = average, below average, fair)		X	X
Parent aspirations for child following school	If child graduates from high school, what are his chances of getting a good job? (Single item, recoded to 2 levels: 1 = excellent, good; 2 = fair, poor, very poor)		X	
Parent general satisfaction with child's school	In general, how does child feel about his teacher? In general, how satisfied are you with child's progress in school? (2 items combined, recoded to 2-level variable: 1 = high satisfaction on both items; 2 = less than high satisfaction on one or both)		X	

Appendix 8 (continued)

Parent Awareness and Participation Variables	Definition	Source		
		Classroom Roster	Parent Interview	
			Long Form	Short Form
Parent sense of influence or control over school (also included in "Sense of control--helplessness")	There's nothing parents can do to change the schools. (Single item, 4-levels: 1 = high sense of influence or control; 4 = low sense of influence or control)		X	
Parent feelings that his ideas matter to those who run the school	In this community, people who run the schools really care about what parents think. (Single item, recoded to 3 levels: 1 = strongly agree; 2 = agree; 3 = disagree, strongly disagree)		X	
Parent confidence and optimism in school matters	In this community the parents have a say about how the schools are run. People who run the schools really know what the parents want. If parents wanted some things changed about the schools, there would be a good chance of getting it changed. (3 items combined, recoded to 3-level variable: 1 = most optimistic; 3 = least optimistic)		X	
Parent sense of helplessness in school matters	There's nothing parents can do to change the schools. If the parents disagree with the teacher or principal, there's nothing parents can do about it. (2 items combined, recoded to 2-level variable: 1 = not helpless; 2 = helpless)		X	

Appendix 8 (concluded)

Parent Awareness and Participation Variables	Definition	Source		
		Classroom Roster	Parent Interview	
			Long Form	Short Form
Parent involvement in social and political groups	Are you active in clubs or organizations that meet regularly? How often do you take part in social activities in which about half of the people are of different ethnic or racial groups? The average citizen can change the government's way of doing things - or - This world is run by a few big shots, and there isn't much the little guy can do about it. (3 items combined, recoded to 3-level variable: 1 = participation in adult groups and sense that government can be changed; 3 = little or no participation in adult groups and sense that government cannot be changed)		X (all items)	X (1 item)
Follow Through parents' awareness of the Policy Advisory Committee	Have you heard of a group called the Policy Advisory Committee? (Single item scored Yes or No)		X	